

Exhibit 56

(REDACTED)



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UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF GEORGIA
COLUMBUS DIVISION

Wilhen Hill Barrientos, Gonzalo
Bermudez Gutiérrez, and
Keysler Ramón Urbina Rojas,
individually and on behalf of
all others similarly situated,

Plaintiffs,

v.

CoreCivic, Inc.,

Defendant.

Case No. 4:18-cv-00070-CDL

**REPORT OF
Steven Schwartz, Ph.D.**

A handwritten signature in blue ink that reads "Steven Schwartz". The signature is written in a cursive, flowing style. Below the signature is a horizontal line.

Steven Schwartz, Ph.D.

December 22, 2021

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1. Introduction

1.1. Qualifications and scope of work

- (1) I am an economist and Managing Director with Intensity, LLC (“Intensity”), based in Dallas, TX. I have been employed by Intensity since January 2021. Intensity has been retained by Plaintiffs’ Counsel on behalf of a class of Plaintiffs who were detainees at the Stewart Detention Center (“Stewart” or “SDC”) operated by CoreCivic, Inc. (“CoreCivic”) (“Defendant”). I have been asked to assess the damages to the Plaintiffs as a result of CoreCivic’s paying detainees a below-market wage for allegedly coerced work by the detainees at SDC.¹
- (2) Until December 31, 2020, I was an economist and Vice President with Charles River Associates, Inc. (“CRAI”); I joined CRAI in June 2015. Prior to my employment at CRAI, I was a Managing Director and head of the economics practice with Alvarez & Marsal Global Forensics and Disputes (“A&M-GFD”), based in New York, NY. I was employed by A&M-GFD from December 2011 until June 2015. Before joining A&M-GFD, I was an economist and Senior Vice President with NERA Economic Consulting (“NERA”), based in White Plains, NY. I began working at NERA in July 1984.
- (3) I received my bachelor’s degree from Wesleyan University (Middletown, CT) in 1976. I graduated *cum laude* and with Departmental Honors in Economics. I earned my M.A. and Ph.D. degrees in Economics from the University of Maryland (College Park, MD) in 1978 and 1980, respectively. After I completed my graduate studies, I served as a member of the economics faculty at Miami University (Oxford, OH) from 1980–1984. My complete educational and employment history is set forth in my CV, attached to this report as Attachment A-1. My CV contains a list of all publications I have authored in the past 10 years and a list of all cases in which, during the past 4 years, I have testified as an expert at trial or by deposition.
- (4) In carrying out my assignment, I considered and relied upon my education, professional background and experience and, as well, the documents and data cited throughout this report and the accompanying exhibits. In forming my opinions, I reviewed documents and data

¹ I understand that there are two alleged classes in this case. In the discussion below, I will not distinguish between the alleged classes, except where such distinctions are important to the discussion.

Intensity is being compensated at a rate of \$595 per hour for my work in this matter. Intensity is being compensated for time spent by others on my team at rates that are lower than my hourly rate. The compensation of Intensity is not dependent on the substance of my testimony or the outcome of this matter.

produced by both parties in discovery for this litigation, deposition testimony of Terrence Lane, Matthew Moye, Freddie Hood, Susan Huffman, Harrell Gray, Droured Blackmon, Russell Washburn, Michael Swinton, Charlie Peterson, Troy Pollock, and Bethany Brazier. I have also considered documents and other materials, which are cited herein and/or listed in Attachment A-2.

- (5) For purposes of my analysis, I have assumed CoreCivic's liability under the claims set forth in the Complaint. In the discussion below, I do not offer any opinions regarding CoreCivic's liability as alleged in the Plaintiffs' complaint.
- (6) My analysis is ongoing, and my conclusions are based on information currently available to me. If any additional information or testimony—including from any of the experts in this matter—becomes available to me, I reserve the right to consider such information and to supplement this report and my opinions, as appropriate. I also reserve the right to supplement my report in light of any additional fact discovery, opinions by other experts, and/or trial testimony, and to respond to other experts and the testimony of any fact witnesses.
- (7) In addition, should I be asked to testify to my opinions at the trial of this matter, I reserve the right to prepare exhibits that summarize portions of my analysis and my opinions and to prepare demonstrative exhibits that help to explain elements of my analysis and opinions. I have not yet selected the exhibits I may ultimately use. In addition, I respectfully reserve the right to use animations, demonstratives, enlargements of actual attachments, and other information in order to convey my opinions.
- (8) The entirety of my report, including attachments and referenced materials, supplies the basis for my analysis and conclusions. The organizational structure of the report is for convenience. To the extent that facts, economic analysis, and other considerations overlap, I generally discuss such issues only once for the sake of brevity. Neither the specific order in which each issue is addressed nor the organization of my report or attachments affects the ultimate outcome of my analysis.

1.2. Understanding of the Legal Framework

- (9) Plaintiffs have alleged that Defendant obtained, or attempted to obtain, Plaintiffs' labor and services in violation of 18 U.S.C. § 1589 which provides that any person who "knowingly provides or obtains the labor or services of a person . . . by means of force, threats of force, physical restraint, or threats of physical restraint; by means of serious harm or threats of

serious harm . . . ; by means of the abuse or threatened abuse of law or legal process; or by means of any scheme, plan, or pattern intended to cause the person to believe that, if that person did not perform such labor or services, that person or another person would suffer serious harm or physical restraint, shall be punished” by fine or imprisonment.² Plaintiffs have brought their claims against Defendant pursuant to the civil remedies provision of the Trafficking Victims Protection Act (U.S.C. § 1595) that permits individuals to bring a civil action against anyone who knowingly “benefits, financially or by receiving anything of value from participation in a venture which that person knew or should have known has engaged in an act in violation of [the act]” and entitles them to “recover damages.”³ I understand that Plaintiffs are seeking compensatory damages and restitution in the full amount of their losses and punitive damages as a result of Defendant’s conduct.⁴

- (10) Plaintiffs have alleged a claim for unjust enrichment and seek damages as a result of Defendant’s “materially and significantly reduced” labor costs and expenses and its increased corporate profits obtained by undercompensating labor from Plaintiffs.⁵ I understand that, under Georgia law, the theory of unjust enrichment “applies when there is no legal contract and when there has been a benefit conferred which result in an unjust enrichment unless compensated” and that an award for unjust enrichment “must be supported by evidence from

² Amended Complaint, 10/16/2020, ¶¶ 114–127.

18 U.S.C. § 1589(a)(1)-(4), and (d).

18 U.S.C. § 1594(a). (“Whoever attempts to violate section . . . 1589 . . . shall be punishable in the same manner as a completed violation of that section.”)

³ Amended Complaint, 10/16/2020, ¶ 15.

18 U.S.C. § 1595(a).

⁴ Amended Complaint, 10/16/2020, ¶¶ 124–127.

Arreguin v. Sanchez, 398 F.Supp.3d 1314, 1326–1329 (S.D. Ga. 2019). Court awarded immigrant worker plaintiffs damages under the Trafficking Victims Protection Reauthorization Act for restitution, emotional distress, and punitive damages. (“Restitution for a trafficking victim requires, at a minimum, compensation for the value of her services as guaranteed under the [Fair Labor Standards Act (“FLSA”).” *Lagasan v. Al-Ghasel*, 92 F. Supp. 3d 445, 457 (E.D. Va. 2015) (citing 18 U.S.C. § 1593(b)(3)). The FLSA provides that “[a]ny employer who violates [the Act] shall be liable to the employee or employees affected in the amount of their unpaid minimum wages, or their unpaid overpaid compensation, as the case may be, and in an additional equal amount as liquidated damages.” 29 U.S.C. § 216(b). . . Therefore, the Court finds that Plaintiffs are entitled to restitution under the TVPRA (for the value of their services as guaranteed under the FLSA) . . . “Punitive damages are generally appropriate under the [TVPRA] civil remedy provision because [the TVPRA] creates a cause of action for tortious conduct that is ordinarily intentional and outrageous.’ . . . In deciding the amount of punitive damages, courts consider ‘whether the harm was physical or economic, whether defendants acted with reckless disregard of the victim’s health and safety, whether the conduct was repeated, and whether the conduct was a result of malice or deceit as opposed to mere accident.”)

⁵ Amended Complaint, 10/16/2020, ¶¶ 128–133.

which it can be determined to a reasonable certainty” that the Defendant realized such gains.⁶ I further understand that, under Georgia law, an unjust enrichment claim requires a plaintiff to establish: (1) that plaintiff conferred a benefit on the defendant and (2) that equity requires the defendant to compensate the plaintiff for the benefit.⁷

- (11) I understand that Plaintiffs seek declaratory and injunctive relief on behalf of themselves and on behalf of those similarly situated.⁸ I further understand declaratory or injunctive relief is permitted “where a party has taken action or refused to take action with respect to a class, and final relief of an injunctive nature or of a corresponding declaratory nature, settling the legality of the behavior with respect to the class as a whole, is appropriate.”⁹

1.3. Summary of opinions

- (12) Based on the material received and considered and my analysis to date, I summarize my conclusions as follows:

- CoreCivic derived substantial value from the detainees who performed work pursuant to the work program in place at Stewart.
- That value derives from the difference between the wages paid to detainees (as reflected in documents and data provided by CoreCivic) from what I understand are its ordinary-course-of-business books and records and the wages (plus benefits) that it would have paid to employees hired to perform those same tasks.
- That value is properly calculated using a class-wide model and no individual-level analysis; a formulaic approach to the calculation described below is appropriate, reasonable, and does not rely on individual-specific evidence. The value is calculated for two classes and two class periods. The Forced Labor class period runs from April 17, 2018 to the date of final judgment in this matter. The Unjust Enrichment class period runs from April 17, 2014 to the date of final judgment in this matter. The damages for the two classes are not additive.
- Because the data provided by CoreCivic were incomplete, a series of conservative assumptions were made about, among other things, the number of shifts worked by

⁶ O.C.G.A. § 9-2-7. (“Ordinarily, when one renders a service or transfers property which is valuable to another, which the latter accepts, a promise is implied to pay the reasonable value thereof.”)

Cochran, et al. v. Ogletree, 536 S.E.2d 194, 196–197 (Ct. App. Ga. 2000).

⁷ *Chem-Nuclear Systems, Inc. v. Arivec Chems., Inc.*, 978 F.Supp. 1105, 1110 (N.D. Ga. 1997). (“[U]nder Georgia law, an unjust enrichment claim requires the plaintiff to establish the following: (1) that the plaintiff conferred a benefit on the defendant and (2) that equity requires the defendant to compensate the plaintiff for this benefit.”)

⁸ Amended Complaint, 10/16/2020, at ¶¶ 104, 108, and 113.

⁹ Fed.R.Civ.P. 23(b)(2) at Notes of Advisory Committee on Rules – 1966 Amendment. (“Subdivision (b)(2). This subdivision is intended to reach situations where a party has taken action or refused to take action with respect to a class, and final relief of an injunctive nature or of a corresponding declaratory nature, settling the legality of the behavior with respect to the class as a whole, is appropriate.”)

detainees per day, the average shift length, and the comparison wage rate and/or comparison benefits rate to be used in determining the value derived by CoreCivic for job titles/descriptions for detainees working in the VWP.

- The estimated damages to the Forced Labor class in wages are between \$37.6 million and \$42.2 million; the estimated damages to the Unjust Enrichment class in wages are between \$22.2 million and \$26.6 million.
- The estimated damages to the Forced Labor class in benefits are between \$6.3 million and \$16.7 million; the estimated damages to the Unjust Enrichment class in benefits are between \$5.9 million and \$13.4 million.

2. Relevant Parties

2.1. CoreCivic, Inc.

- (13) CoreCivic, formerly the Corrections Corporation of America, is a for-profit corporation providing correctional and detention services.¹⁰ CoreCivic is incorporated in Maryland, with its principal office located in Tennessee;¹¹ it is the largest owner of partnership correctional, detention, and residential reentry facilities in the United States.¹² CoreCivic is also one of the largest private prison operators in the United States.¹³ CoreCivic partners with the U.S. Marshals Service and Immigration and Customs Enforcement (“ICE”) to provide detention centers where CoreCivic detains individuals such as Plaintiffs.¹⁴
- (14) CoreCivic operates in three sectors: CoreCivic Safety, CoreCivic Community, and CoreCivic Properties.¹⁵ CoreCivic Safety consists of correctional and detention facilities owned, controlled, or managed by CoreCivic.¹⁶ CoreCivic Community consists of residential and non-residential services that use monitoring and counseling to aid in the reentry of released individuals into society.¹⁷ CoreCivic Properties includes the designing, building, and managing of government real estate projects and facilities.¹⁸ CoreCivic earned total revenues of \$1.905 billion in 2020, \$1.981 billion in 2019, and \$1.836 billion in 2018.¹⁹

¹⁰ CoreCivic, About, <https://www.corecivic.com/about> (accessed 10/21/2021).

CoreCivic, Form 10-K, 2020, at 7.

¹¹ CoreCivic, Form 10-K, 2020, at 7.

¹² CoreCivic, About, <https://www.corecivic.com/about> (accessed 10/20/2021).

¹³ CoreCivic, Form 10-K, 2020, at 7.

¹⁴ CoreCivic Website, Detention Services, <https://www.corecivic.com/safety/detention-services> (accessed 10/21/2021).

¹⁵ CoreCivic Website, Home Page, <https://www.corecivic.com/> (accessed 10/21/2021).

¹⁶ CoreCivic, Form 10-K, 2020, at 8.

¹⁷ CoreCivic Website, Community, <https://www.corecivic.com/community> (accessed 10/21/2021).

¹⁸ CoreCivic Website, Home Page, <https://www.corecivic.com/> (accessed 10/21/2021).

¹⁹ CoreCivic, Form 10-K, 2020, at 69.

CoreCivic, Form 10-K, 2019, at 61.

CoreCivic, Form 10-K, 2018, at 54.

- (15) CoreCivic's SDC is an immigrant detention facility located in Lumpkin, Georgia.²⁰ It is owned and operated by CoreCivic through an Intergovernmental Service Agreement ("IGSA") between ICE and Stewart County to detain immigrants.²¹ Plaintiffs and class members, as defined in the Section 2.2, were detained at Stewart.²² Stewart opened in 2006, has a design capacity of 1,752 beds,²³ and employs approximately 350 to 360 non-exempt staff.²⁴

2.2. Class definitions

- (16) The Complaint alleges two classes. One is a class of detained individuals who performed work for CoreCivic at Stewart in the Volunteer Work Program starting ten years prior to the date of the original complaint (filed April 17, 2018) through the final judgement in the matter ("Forced Labor class" or "FL class").²⁵ The other class is defined as the detained individuals who performed work for CoreCivic at Stewart in the Volunteer Work Program starting four years prior to the date of the original complaint (filed April 17, 2018) through the final judgement in the matter ("Unjust Enrichment class" or "UE class").²⁶
- (17) The damages period for the Forced Labor class begins April 17, 2008, and the damages period for the Unjust Enrichment class begins April 17, 2014. See Attachment B-1.

²⁰ Detention Watch Network, "Stewart Detention Center Expose & Close," 11/2012, at 1, available at: <https://www.detentionwatchnetwork.org/sites/default/files/reports/DWN%20Expose%20and%20Close%20Stewart.pdf>.

²¹ Detention Watch Network, "Stewart Detention Center Expose & Close," 11/2012, at 1, available at: <https://www.detentionwatchnetwork.org/sites/default/files/reports/DWN%20Expose%20and%20Close%20Stewart.pdf>.

²² Amended Complaint, 10/16/2020, ¶ 3.

²³ Detention Watch Network, "Stewart Detention Center Expose & Close," 11/2012, at 1, 2, available at: <https://www.detentionwatchnetwork.org/sites/default/files/reports/DWN%20Expose%20and%20Close%20Stewart.pdf>.

CoreCivic, Form 10-K, 2020, at 21.

²⁴ Russell Washburn, Dep. Tr., 12/1/2021, at 57:5–57:17, 62:14–62:20. ("Q (By Mr. Howard) Under the category "Design Capacity," you see it says 1,752? A Yes. Q What is that a reference to? A That's the contract that staffing -- staffing levels. Q What do you mean by that? A It's not the total number of beds that we have at the facility. That's the number that, in this case, ICE, the partner, has communicated that their desire is to potentially utilize up to seventeen fifty-two -- one thousand seven hundred and fifty-two beds...Q And how many nonexempt employees do you have? . . . A Nonexempt, and, again, I can't give you an exact number, but we're in that 350 to 360 -- somewhere between 350 and 360 mark outside -- that are hourly.")

²⁵ Amended Complaint, 10/16/2020, at 26.

²⁶ Amended Complaint, 10/16/2020, at 27.

3. Voluntary Work Program

3.1. Voluntary Work Program at Stewart

- (18) Stewart provides an overview of its Voluntary Work Program (“VWP”) (which is the subject of this litigation) in their Detainee Orientation Handbook.²⁷ Eligibility to work in the VWP is determined by ICE and Stewart.²⁸ Interested detained individuals need to send in a Detainee Information Request form to a case manager to be considered for the program.²⁹ If selected to participate in the VWP, detained individuals are required to sign a 19-100B Detainee Voluntary Work Program Agreement and complete any work-related orientations or training prior to starting work.³⁰
- (19) According to CoreCivic, pay periods run from Sunday to Saturday each week, and CoreCivic states that detained individuals are not permitted to work more than 8 hours per day or 40 hours per week.³¹ VWP participants are required to work according to an assigned work schedule.³² Compensation for VWP participants is \$1 to \$4 per day, depending on the work assignment.³³ Unexcused absences or unsatisfactory work performance “[can] result in removal from the voluntary work program.”³⁴ Detained individuals can also volunteer for “special details” for temporary situations that would arise at Stewart.³⁵ This “labor intensive” work (*e.g.*, digging trenches or removing topsoil) can last from a few hours to a few days.³⁶

²⁷ See, for example:

Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–068, at CCBVA0000000042–43).

Note that the description of the VWP at Stewart provided in this section is a high-level overview and is not intended to provide a detailed description of the VWP.

²⁸ Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–068, at CCBVA0000000042).

Note that according to the handbook, eligibility was described to be determined by “ICE and CCA/SDC.” CCA/SDC is defined earlier in the document as Corrections Corporation of America/Stewart Detention Center. CoreCivic was formerly the Corrections Corporation of America.

²⁹ Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–068, at CCBVA0000000042–43).

³⁰ Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–068, at CCBVA0000000042).

³¹ Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–068, at CCBVA0000000042).

³² Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–068, at CCBVA0000000042).

³³ Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–068, at CCBVA0000000042).

³⁴ Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–068, at CCBVA0000000042).

³⁵ Resident Work Program Policies, 3/1/2013 (CCBVA0000003942–46, at CCBVA0000003944–45).

³⁶ Resident Work Program Policies, 3/1/2013 (CCBVA0000003942–46, at CCBVA0000003944–45).

(20) There are two main categories of jobs in the VWP: (1) jobs [REDACTED] and (2) [REDACTED].³⁷ VWP positions offered to detained individuals and supervised by CoreCivic and [REDACTED] include:³⁸

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- Food Preparation Worker
- Cook
- Barber
- Front Office Porter
- Hall Porter
- Laundry Worker
- Pod Orderly
- Janitor or Sanitation Worker
- Commissary Worker / Clerk
- Outside Recreation / Worker
- Sanitation Orderly
- Medical / Clinic Worker

3.2. ICE Performance Based National Detention Standards

(21) ICE has various standards of care for facilities, depending on the type of facility or contract agreed upon between the entity and the Department of Homeland Security (“DHS”).³⁹ Non-dedicated ICE facilities are subject to ICE’s National Detention Standards (“NDS”), and facilities that hold families have separate Family Residential Standards (“FRS”).⁴⁰ For facilities that are dedicated solely to holding individuals in ICE custody, the Performance Based National Detention Standards (“PBNDS”) apply.⁴¹ Further, CoreCivic’s Rule 30(b)(6)

³⁷ See, for example:

[REDACTED] (CCBVA0000118412–421).

[REDACTED] (CCBVA0000216451–6520).

³⁸ [REDACTED] (TRINITY00001653–662, at TRINITY00001653).

Inmate/Resident Job Description, (CCBVA0000004685–4710).

³⁹ National Immigration Forum, “Fact Sheet: Immigration Detention in the United States,” 1/27/2021, <https://immigrationforum.org/article/fact-sheet-immigration-detention-in-the-united-states/>.

⁴⁰ National Immigration Forum, “Fact Sheet: Immigration Detention in the United States,” 1/27/2021, <https://immigrationforum.org/article/fact-sheet-immigration-detention-in-the-united-states/>.

⁴¹ National Immigration Forum, “Fact Sheet: Immigration Detention in the United States,” 1/27/2021, <https://immigrationforum.org/article/fact-sheet-immigration-detention-in-the-united-states/>.

representative and Warden at Stewart, Russell Washburn, testified that the VWP at Stewart must be conducted according to the PBNDS.⁴² Thus, the PBNDS apply to CoreCivic's Stewart facility.

- (22) ICE released the 2011 PBNDS and most recently revised them in December 2016.⁴³ The PBNDS covers broad topics including safety, security, order, care, activities, justice, and administration and management.⁴⁴
- (23) Further, PBNDS guidelines require participants to work according to a schedule, with a maximum of 8 hours per day and 40 hours weekly.⁴⁵ For Service Processing Centers ("SPCs"), Contract Detention Facilities ("CDFs"), and dedicated IGSA facilities, detained individuals may not work more than one detail per day.⁴⁶ For their work, detained individuals must receive monetary compensation of at least \$1 per day.⁴⁷ While the PBNDS guidelines set a minimum for payment to detained individuals, they do not *prohibit* the payment of more than \$1 per day, or the \$4 per day CoreCivic pays some of the detained workers.⁴⁸

⁴² Russell Washburn, Dep. Tr., 12/1/2021, at 202:23–203:21. ("Q Okay. You're familiar with PBNDS Section 5.8, correct? A Yes, ma'am. Q That's the voluntary work program section? A Yes, ma'am. . . . Q Okay. Let's go to pdf page 385. This is the voluntary work program section? A Yes. Q Okay. And do you agree that this section applies to Stewart? A Yes.")

See, also:

Terrence Lane, Dep. Tr., 10/5/2021, at 71:22–71:24. ("Q Okay. Is it your understanding that the work program must comply with the PBNDS? A. Yes, ma'am.")

⁴³ U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

⁴⁴ U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, at ii, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

⁴⁵ U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, at 407, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

⁴⁶ U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, at 405, 407, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

⁴⁷ U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, at 407, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

⁴⁸

[REDACTED]

[REDACTED]

- (24) Under the guidelines, detainee workers are expected to not evade attendance for work details, to perform the duties assigned, and to follow safety requirements.⁴⁹ According to the standards, the repercussion for not following these expectations is dismissal from the program,⁵⁰ but does not include any disciplinary actions such as solitary confinement, housing changes, and others.⁵¹ That said, I understand that Plaintiffs allege that they are subjected to various disciplinary actions, including those purportedly prohibited by the PBNDS.

⁴⁹ U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, at 408, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

⁵⁰ U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, at 407–08, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

⁵¹ In fact, the PBNDS states that one of the expected outcomes of the detention standards for VWP is to have *fewer* disciplinary incidents, along with improved morale and decreased idleness. See:

U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, at 405, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

4. Alleged Conduct and Economic Benefits to CoreCivic from the Alleged Conduct

- (25) CoreCivic is alleged to use coercive tactics on its VWP participants in order to ensure that essential work is performed at the Stewart facility, including threatening detained individuals who refuse to work, organize a work stoppage, or participate in a work stoppage with various sanctions.⁵² The alleged conduct is described in detail in the Amended Complaint and is not summarized in detail here.⁵³ The damages claims for both alleged classes derive from the allegation that CoreCivic's actions with respect to the detainees are coercive; by using these coercive tactics, CoreCivic is able to avoid the costs of paying a non-detainee labor force and thereby employ a nearly-free labor force to maintain the Stewart facility.⁵⁴ Further, a portion of the costs associated with this labor is then paid back to CoreCivic through the commissary.⁵⁵ Thus, through these reduced costs, Stewart is able to operate at an "enormous profit."⁵⁶
- (26) An economic consequence of the alleged behavior is that CoreCivic benefited from the work performed by detained individuals who participated in the VWP at Stewart. As discussed above, employing a nearly-free labor force and recouping a portion of paid wages through the commissary meant that Stewart was able to earn and sustain large profits.⁵⁷ If no detained

⁵² Amended Complaint, 10/16/2020, at 17.

⁵³ Amended Complaint, 10/16/2020, at 14, 16, 17, 18, 19, and 25.

⁵⁴ Amended Complaint, 10/16/2020, at 19.

⁵⁵ Amended Complaint, 10/16/2020, at 19.

See, also:

Bethany Brazier, Dep. Tr., 11/18/2021, at 197:23–198:2. ("Q. People in the work program could use their wages from working to buy items in the commissary, right? A. Yes.")

⁵⁶ Amended Complaint, 10/16/2020, at 19.

See, also:

[REDACTED] (CCBVA0000106584–588).

[REDACTED] (CCBVA0000106578–583).

[REDACTED] (CCBVA0000106572–77).

[REDACTED] (CCBVA0000106566–571).

[REDACTED] (CCBVA0000106561–65).

[REDACTED] (CCBVA0000106555–560).

⁵⁷ Amended Complaint, 10/16/2020, at 19.

individuals worked in the VWP, as a matter of economics, Stewart would have needed to hire and pay full-time workers at least the minimum wage (plus benefits) to perform work at the facility. Doing so would have been significantly more costly to CoreCivic. Thus, CoreCivic was able to realize value by saving on costs from operating the VWP while continuing to generate revenue.

- (27) The individuals who ran Stewart for CoreCivic also had an incentive to reduce labor costs and thereby increase the profitability of the facility. For example, CoreCivic [REDACTED]

58

58 See, for example:

(CCBVA0000258428–431, at CCBVA0000258429).

Michael Swinton, Dep. Tr., 11/2/2021, at 84:22–86:14.

Charlie Peterson, Dep. Tr. 10/18/2021, at 81:18–82:21 (“

5. Damages Analysis

5.1. Damages theory

- (28) The assumption of liability implies, of course, that there is a finding that CoreCivic ran the VWP in a manner that violated the law. As such, the premise of the damages calculations described below is that in the but-for world, that is, absent the alleged conduct, CoreCivic would hire and pay non-detainee workers to perform duties at Stewart, and it would lose the value derived by using detainee labor. Thus, CoreCivic must compensate participants in the VWP program in the amount of the value of their labor to CoreCivic, measured by what they would have had to pay for non-detainees to perform it if no detainees participated in the work program. To the extent CoreCivic is ordered to disgorge profits gained from the coerced labor, I understand that the value of that labor discussed herein could also constitute the measure of those damages.
- (29) The per-hour damages to the classes alleged in the Complaint are measured by the difference between the hourly (market) wage and the lower rate paid under the coercive regime. That difference is applied to the hours worked under the coercive system to determine the total labor cost savings, that is, the damages. These damages are calculated on a class-wide basis, using a class-wide model. No damages calculation is made on an individual-by-individual basis; while there are some differentiating factors in the calculation of damages (*e.g.*, different wages by job held, if applicable), the calculation of damages can be done formulaically and does not require individual-specific evidence. My damages analysis does not depend on individual factors such as work quality and individual employee reviews, among others. All detainees in the same position are paid the same wage per hour during the relevant period, and the possible alternative wage(s) can be determined widely by job category, making this a prime case for a class-wide damages model.

5.2. Data and data preparation

5.2.1. CoreCivic VWP pay data

- (30) In order to estimate damages owed to previously and currently detained individuals who worked as part of the VWP at Stewart, the following information is needed: (1) total hours worked by VWP participants, (2) total wages paid for those hours worked and/or the hourly wage rate paid, and (3) job titles or descriptions of work performed. Ordinarily, this

information is contained in timecard or time punch data and/or payroll data. These data would facilitate the estimation of total hours worked, paid time, and paid wages.

- (31) As I understand it, CoreCivic was asked to produce such comprehensive data for those detained individuals who participated in the VWP during the appropriate class periods. Instead, CoreCivic produced pay data presented in the form of Excel spreadsheets.⁵⁹ These spreadsheets had no information on the number of shifts worked, total hours worked, and limited—and often indecipherable—information on job title and/or work performed. I infer that the requested data existed at some point within CoreCivic, since there is evidence that

[REDACTED]
[REDACTED]. For example, according to [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]⁶⁰

- (32) The VWP pay data produced by CoreCivic consist of entries that appear to correspond to VWP worker payments only for work performed under the program. Listed below are the seven variables in the CoreCivic data along with a description of the apparent meaning of those variables:⁶¹

- Agency #: VWP worker identification number.
- Name: VWP worker name.
- Receipt #: Pay receipt identification number.
- Deposit From: Text memo variable often containing information on dates when the work was performed for which the payment is being made.⁶²
- Amount: Payment amount in USD.
- Description: Description of the line item. Takes one of two values: “JOB PAY – NONREIMBURSABLE” or “REVERSED JOB PAY – NONREIMBURSABLE.”
- Date: Date that the payment was made to the VWP worker.

⁵⁹ [REDACTED] (CCBVA0000006056-59 and CCBVA0000106554). I understand that the [REDACTED] natively produced spreadsheets [REDACTED] which I used to create the combined analysis dataset correspond to these Bates-stamped documents.

⁶⁰ CoreCivic, [REDACTED] (CCBVA0000190017).

⁶¹ For list of variables, see headers in:

[REDACTED], 11/2/2004–12/23/2020 (CCBVA0000006056-59 and CCBVA0000106554).

⁶² Date information is recorded in inconsistent formats and is often difficult to parse, if it is recorded at all—over 10,000 records contain no date information. While this memo occasionally includes information on shift type (e.g., “Kitchen 1st Shift”), it often does not contain useful information on job title or work performed.

- (33) I understand that CoreCivic stated through its counsel that the produced spreadsheets cover a period from November 2004 to December 2020; the data actually cover a date range beginning in October 2006⁶³ and all of the data are redacted entirely prior to December 2008.⁶⁴ As such, the combined, unredacted source data consist of 945,108 total pay entries from December 23, 2008 to December 23, 2020.⁶⁵ Figure 1 provides a screenshot of how the raw data appear, in the form in which I understand they were produced by CoreCivic.

Figure 1: Screenshot of Produced CoreCivic VWP Pay Data⁶⁶

AGENCY #	NAME	Print Date: 09/07/2018 1:48:05PM	INMATE PA From: 08/01/2013 To: 09/01/2016	RECEIPT # DEPOSIT FROM	AMOUNT DESCRIPTION	DATE
[REDACTED]						

- (34) The CoreCivic data, as produced, do not provide the complete information necessary for me to complete my analysis of estimated damages for both classes in a readily useable form. In order for the CoreCivic data to be useable for analysis, the data have to be processed to transform CoreCivic's data dump into a useable analytical database.⁶⁷ A key task that had to be completed in preparing the CoreCivic data for analysis was to reasonably estimate the number of shifts worked for each pay record. This task required several steps of analysis

⁶³ CoreCivic, Email from Jacob Lee about CoreCivic's Production, 9/10/2021.

[REDACTED] (CCBVA0000006056-59 and CCBVA0000106554).

⁶⁴ [REDACTED] (CCBVA0000006056-59 and CCBVA0000106554).

⁶⁵ [REDACTED] (CCBVA0000006056-59 and CCBVA0000106554).

See attachment H-4.

⁶⁶ [REDACTED] (CCBVA0000006058).

⁶⁷ To prepare and analyze the CoreCivic VWP pay data, I use Stata, a statistical software program. I have provided copies of the programs (and log files) that were written to prepare and complete my analysis in Attachments H-1, H-2, H-3, and H-4.

within the CoreCivic raw data. First, where such information exists and can be reasonably parsed, “days worked” need to be extracted from the *deposit from* variable for those records. Second, using information produced by CoreCivic and deposition testimony from CoreCivic employees, estimated shifts per day and estimated hours per shift were applied to the extracted total number of workdays, as described in the first step. Finally, as I discuss below in Section 5.3.1, the assigned variable representing the number of shifts worked, *i.e.*, shift count, created in the data preparation process, can be used to estimate total hours worked in a given pay entry.

- (35) In preparing the data, I assume that VWP participants work one shift per day, which is consistent with CoreCivic’s documents about the VWP. For example, [REDACTED] [REDACTED].⁶⁸ However, there is evidence that detainee workers sometimes (perhaps often) work more than one shift in a day.⁶⁹ As such, my assumption of one shift per day ensures that my calculations are conservative, to the extent *some* VWP participants are likely to have worked more than one shift on some days.

5.2.2. Data preparation

- (36) As discussed above, the combined data sources provided by CoreCivic contain 945,108 pay data records, or pay entries, spanning from December 23, 2008 to December 23, 2020 for potential use in the damages analysis. The data preparation process focused primarily on the review of text memos contained in the *deposit from* variable, the main source of qualitative information about each pay entry. These memos contained, in various forms and with varying degrees of completeness, the date or dates on which work was performed and the type of job performed. Ultimately, I identified sufficient information to allow approximately 94% of pay entries to be prepared for analysis. As noted in Attachment A-3 below, approximately 6% of entries cannot be used in my analysis.⁷⁰ As such, to the extent that these non-analyzable entries relate to work performed by detainee workers, my estimates of damages based on the CoreCivic pay data are conservative, as they do not account for all of the pay entries.

⁶⁸ [REDACTED] (CCBVA0000118422–23).

⁶⁹ Susan Huffman, Dep. Tr., 7/14/2021, at 135:18-135:21 (“Q: Do the detained workers at Stewart ever work more than one shift in a day? A: Depending on, you know, the situation; it’s a possibility if they volunteer.”).

⁷⁰ Attachment A-3.

- (37) Because of the volume of produced pay data and extent of non-useful information, as well as peculiarities and discrepancies across pay entries, a systematic approach was taken in extracting shift information. Additionally, throughout the data preparation process, I adopted a conservative approach. For example, the systematic approach assigned low shift counts (*i.e.*, 1–4 shifts) in the vast majority of situations, and only assigned high shift counts in select situations where there was substantial information yielding a high degree of confidence in the accuracy of the higher count. If a VWP worker worked multiple shifts on a single day, these double (or triple) shifts were not recorded in the pay data. Consequently, my approach likely *undercounted* the total number of shifts performed by VWP workers, and thus *underestimated* the total number of hours worked. This means that the approach may have overestimated the actual hourly wage paid to detained individuals and underestimated damages to the class.
- (38) To derive the number of workdays, and thus shifts, associated with each pay entry, dates worked by a detainee were extracted from the *deposit from* variable. The pay data also contain a *date* variable, which appears to record the date on which the payment was issued, as opposed to the date on which work was performed. If I extracted a single, clean date from the *deposit from* variable, and the extracted date was within 31 days of the *date* variable, I assumed the pay entry corresponded to a single workday, and thus single shift. This type of pay entry accounted for approximately 87.7% of the total entries in the combined, unredacted data.⁷¹
- (39) For more complicated cases, my general approach was, first, to extract dates. I then counted total dates as workdays, assumed one shift per workday, and assigned that quantity of shifts worked to the given pay entry, accordingly. For an exhaustive list of steps performed in preparing the data for analysis, along with example entries to illustrate the step described, see Attachment A-3.

5.3. Analysis approach

- (40) I calculate damages for both the Forced Labor class and the Unjust Enrichment class. Note that the damages estimates for the two classes are *not* additive. The damages analysis is based on a comparison of the estimated hourly wages paid to VWP participants for their labor at Stewart and a comparison wage, *i.e.*, the market or contractual wage that CoreCivic would have paid non-detained individuals to perform the same labor. The difference between the

⁷¹ Attachment H-2.

829,315 pay entries fall into this category, out of 945,108. $829,315 / 945,108 = 87.7\%$.

estimated paid hourly wage and the comparison wage was then multiplied by the total number of hours worked throughout the appropriate damages period. That product is the estimate for the value of VWP labor to CoreCivic.

- (41) I needed to determine two additional inputs before calculating damages: (1) average shift length and (2) a comparison wage. Using the shift estimation done in the data preparation steps described in the section above, I calculated the average hourly rate for VWP workers using the average shift length and the produced paid wage from the VWP pay data. Then, using the comparison wage, I calculated the damages for those estimated worked hours.
- (42) This approach is conservative because its reliance on the VWP pay data does not account for instances where CoreCivic remunerated VWP participants using non-monetary means not reflected in the VWP pay data. For example, there is evidence in the documents and data that indicates a pattern whereby CoreCivic paid VWP participants in phone cards, occasionally for working additional shifts. For example:

- a. [REDACTED] .⁷²
- b. [REDACTED] ⁷³
- c. Former Assistant Chief of Security at Stewart, Freddie Hood (2021), testified (2021) that phone cards were used as compensation in instances where a VWP participant worked more than one shift per day.⁷⁴ Mr. Hood explained that non-monetary incentives were necessary in such situations owing to deficiencies in CoreCivic's payments system that prohibited CoreCivic from paying VWP participants in cash for more than one shift per

⁷² [REDACTED] (CCBVA0000152098-99).

⁷³ [REDACTED] (CCBVA0000198558).

⁷⁴ Freddie Hood, Dep. Tr., 10/22/2021, at 111:16-112:3. ("And so when they worked taking out the trash, money is deposited in their account as the payment for their job as a trash worker, right? A. Yes, ma'am. Q. And then if that worker also waxes and buffs the hallways -- A. Right. Q. --they get to choose what their payment is, right? A. Well they -- yeah, they could choose whether they wanted a phone call, commissary item, you know, extra tray.")

day.⁷⁵ Mr. Hood also noted that CoreCivic employed additional incentives beyond phone cards in these situations, including commissary items or extra servings of food.⁷⁶

- (43) In addition to the above instances, I understand, based on emails produced by CoreCivic, that CoreCivic [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]⁷⁷ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]⁷⁸ [REDACTED]
[REDACTED]
[REDACTED]⁷⁹

- (44) I conclude that my damages analysis accounts for only a portion of the labor worked by VWP participants. Instances where VWP participants received phone cards for hours worked, as well as instances where [REDACTED] are hours that are not, as I understand it, reflected in the VWP pay data, and thus, are not captured by my analysis.

- (45) Additionally, the VWP pay data that have been produced by CoreCivic through the time of submission of this report are through December 2020.⁸⁰ As such, the analysis provided herein estimates only damages through the end of these data though I understand plaintiffs are entitled to damages through the date of final judgment in this matter. Since damages after

⁷⁵ Freddie Hood, Dep. Tr., 10/22/2021, at 112:11–1112:17. (“Q. Whose – where did you – why was that your understanding that you couldn’t pay them twice? A. The system wouldn’t allow us to pay them twice. Q. So it was an issue with the computer system that y’all used to process the payments? A. Yes, ma’am.”)

⁷⁶ Freddie Hood, Dep. Tr., 10/22/2021, at 111:16–112:3. (“And so then when they worked taking out the trash, money is deposited in their account as the payment for their job as a trash worker, right? A. Yes, ma’am. Q. And then if that worker also waxes and buffs the hallways -- A. Right. Q. --they get to choose what their payment is, right? A. Well they -- yeah, they could choose whether they wanted a phone call, commissary item, you know, extra tray.”)

⁷⁷ [REDACTED] (CCBVA0000198559).

⁷⁸ [REDACTED] (CCBVA0000229397–9400).

⁷⁹ [REDACTED] (CCBVA0000197030).

⁸⁰ Attachment B-2.

the end of the data are not currently estimated, I reserve the right to amend my analysis if and when updated data are produced.

5.3.1. Average shift length

(46) There is varying information on the average length of a shift at Stewart. Evidence includes:

- a. [REDACTED]
[REDACTED].⁸¹
- b. [REDACTED]
[REDACTED].⁸²
[REDACTED] are occasionally difficult to decipher due to messy handwriting or poor scans, [REDACTED]
[REDACTED].⁸³ [REDACTED]
[REDACTED].⁸⁴ [REDACTED]
[REDACTED].⁸⁵
- c. [REDACTED]
[REDACTED].⁸⁶ [REDACTED] are often not informative, either due to poor handwriting, to being left blank, or to being incomplete.⁸⁷ [REDACTED]
[REDACTED].⁸⁸

⁸¹ [REDACTED] (CCBVA0000118422–CCBVA0000118423).

⁸² See, for example:

[REDACTED] (TRINITY-00033645–47).

[REDACTED] (TRINITY-00033947–952).

[REDACTED] (TRINITY-00035334–35).

⁸³ [REDACTED] (TRINITY-00033645–38710).

⁸⁴ [REDACTED] (TRINITY-00033645–38710).

⁸⁵ [REDACTED] (TRINITY-0003364538710).

⁸⁶ [REDACTED] (CCBVA0000256314–6580).

⁸⁷ See, for example:

[REDACTED] (CCBVA0000256314–6580, at CCBVA0000256372–374, CCBVA0000256414–15).

⁸⁸ See, for example:

[REDACTED] (CCBVA0000256314–6580, at CCBVA0000256565).

- d. [REDACTED] [REDACTED]
[REDACTED] 89 [REDACTED]
[REDACTED] 90
- e. Assistant Chief of Security at Stewart, Terrence Lane (2021), testified that shift length ranges from two hours to eight hours depending on the role performed.⁹¹
- f. Former Assistant Chief of Security at Stewart, Freddie Hood (2021), testified that kitchen workers tended to work eight-hour shifts.⁹²
- g. Former Assistant Warden at Stewart, Harrell Gray (2021), testified that [REDACTED]
[REDACTED]
[REDACTED] 93
- h. Regional Vice President at Trinity, Susan Huffman (2021), testified that kitchen workers worked six-hour shifts.⁹⁴

(47) I estimate that the average shift length is six hours. This is likely a conservative estimate. The most common position identified in CoreCivic's produced pay data was "Kitchen Worker,"⁹⁵ and, per the evidence cited above, kitchen workers tended to work eight-hour shifts. The conservative nature of this approach is also underscored by the fact that VWP workers are assumed to have worked just one shift per day recorded. While there is some limited evidence that some shifts may have lasted under six hours, there is a great deal of evidence that shifts for the most commonly represented type of worker lasted six hours to more than eight hours and, also, that workers could perform multiple shifts in a single day. These facts ultimately support as conservative the assumption of six-hour shifts for damages calculations.

89 [REDACTED] (CCBVA0000069503).

90 [REDACTED] (CCBVA0000069503).

91 Terrence Lane, Dep. Tr., 10/5/2021, at 91:22–92:5, 105:4–105:5, 105:24–106:2, and 120:11–120:13.

92 Freddie Hood, Dep. Tr., 10/22/2021, at 110:19–111:11. ("A. So you can only pay them one time a day. So to compensate them for their voluntary work program, we'll allow them to choose whether they want a commissary item, an extra try or phone time. The only workers that worked the full eight hours were kitchen workers because they were on a shift.")

93 Harrell Gray, Dep. Tr., 10/27/2021, at 210:7–210:11. [REDACTED]
[REDACTED]

94 Susan Huffman, Dep. Tr., 7/14/2021 at 136:12–136:14. ("Q And how long are the shifts at Stewart? A If they have three shifts, it would be six hours.")

95 Attachment H-4.

5.3.2. Comparison wages

- (48) Without the availability of detained individuals to perform inexpensive labor, CoreCivic would need to source, hire, and pay non-detained individuals from the local labor market. As I understand it, VWP participants perform labor that contributes directly and substantially to the daily operations of Stewart Detention Center.⁹⁶ For example, former Case Manager at Stewart, Matthew Moye, testified that [REDACTED] and that not having enough VWP participants working in the kitchen would pose a risk to the “safety, security[,] and sanitation of the facility.”⁹⁷
- (49) CoreCivic recognizes the importance of VWP participants to Stewart’s operations. For example, Assistant Chief of Security at Stewart, Terrence Lane, testified that he or another CoreCivic staff member would perform the duties of an “administration porter” without the availability of a VWP participant to do so.⁹⁸ Susan Huffman, Regional Vice President at Trinity Services Group (“Trinity”), provided similar commentary.⁹⁹ [REDACTED]

.¹⁰⁰

⁹⁶ Amended Complaint, 10/16/2020, at ¶¶ 27, 30, 32.

See, also:

Matthew Moye, Dep. Tr., 10/21/2021, at 48:25–49:16. [REDACTED]

Troy Pollock, Dep. Tr., 9/30/2021, at 54:20–55:3. (“Q. To be clear, you needed to find a solution because the detained worker shortages could interrupt operations? A. Yes. We had a very high turnover of inmates, especially the ones that were from South America. There was an extremely high turnover with that administration, so we couldn’t keep workers in the kitchen.”)

⁹⁷ Matthew Moye, Dep. Tr., 10/21/2021, at 55:11–56:6, 64:4–64:7. (“Q. And not having enough detained workers in the kitchen places at risk the safety, security and sanitation of the facility? A. My opinion, yes.”).

⁹⁸ Terrence Lane, Dep. Tr., 10/5/2021, at 90:20–91:10. (“Q. If there were no volunteers for the administration porter job, who would do that cleaning? A. If there were no volunteers for that job, ma’am? Q. Uh-huh. A. We would do that cleaning. Q. When you say “we,” do you mean the assistant chief security or who? A. Me -- yes, ma’am. It would be the assistant chief of security would be one of those staff members that would have to ensure the cleanliness and sanitation of that facility. Q. The CoreCivic or Stewart staff would be doing the cleaning; is that right? A. Yes, ma’am.”)

⁹⁹ Susan Huffman, Dep. Tr., 7/14/2021 at 90:15–90:18 (“Q. When detained workers don’t show up to work, then Trinity staff is required to perform those duties? A. CoreCivic will supplement. They bring workers in, but the job needs to get done.”).

¹⁰⁰ [REDACTED] TRINITY00000704–865, at TRINITY00000735–37) ([REDACTED])

(50) Mr. Lane confirmed that, in instances where a full-time CoreCivic employee performed the work normally performed by a VWP participant, the CoreCivic employee would receive their normal pay and benefits.¹⁰¹ [REDACTED]

[REDACTED].¹⁰² Furthermore, the duties performed by VWP participants and full-time employees working in similar roles were comparable. [REDACTED]

[REDACTED].¹⁰³

(51) The federal minimum wage is a reasonable choice as the comparison wage. I assume that, absent the availability of detained individuals to perform labor at Stewart, CoreCivic would have paid employees at least the federal minimum wage to perform the same labor. The Georgia Department of Labor states the following on its website: "Georgia's minimum wage is

¹⁰¹ Terrence Lane, Dep. Tr., 10/5/2021, at 91:11–15. ("Q. And if CoreCivic staffed to do that cleaning, they would receive their normal pay; right? A. Yes, ma'am. Q. And their normal benefits, right? A. Yes, ma'am.")

¹⁰² [REDACTED]. (TRINITY00000704–865, at TRINITY00000735--38)

Ms. Huffman also testified in the current matter that CoreCivic employees who filled in for kitchen positions in an absence of detained individual labor during the COVID-19 pandemic would be paid. See:

Susan Huffman, Dep. Tr., 7/14/2021, at 172:19–172:25. ("Q. And you would expect that the CoreCivic employees who filled in for detained workers during the pandemic were paid for their work? A. They're -- correct, you know, CoreCivic employees. Q. And CoreCivic employees are paid? A. Yes.")

¹⁰³ [REDACTED]. (TRINITY00000704–865, at TRINITY00000745)

See also, from Ms. Huffman's deposition in the current matter:

Susan Huffman, Dep. Tr., 7/14/2021, at 90:1–90:9. ("Q. And among the tasks we just discussed in section 7, Inmate Workers of the contract, do Trinity employees perform any of the above tasks on a regular basis? A. Yes. Storeroom, serving line, cooking, cleaning floors, yeah. Q. And that's true for Trinity workers at Stewart specifically? A. Yes.")

\$5.15 per hour, however, with some limited exceptions, the federal minimum wage rate applies.”¹⁰⁴ The federal minimum wage was set at \$6.55 per hour effective July 24, 2008 and was increased to \$7.25 per hour effective July 24, 2009.¹⁰⁵ This represents the lower-bound but-for wage that CoreCivic would need to pay workers at Stewart, absent participation in the VWP resulting from the alleged coercive behavior.

- (52) However, this wage rate may be too low. There is a contract (and related amendments¹⁰⁶) between ICE and CoreCivic, which, among other terms, delineates the hourly wages owed to individuals performing various occupations under the contract between the two parties.¹⁰⁷ It is economically plausible that in the but-for world absent the alleged coercive behavior, CoreCivic would need to pay hired workers pursuant to the terms of this contract and related amendments and would need to offer the wages and benefits set forth in those agreements.
- (53) I sought to determine the rates at which such full-time employees have been paid and the benefits they received, if any, under agreements with ICE. I identified amendments to a

¹⁰⁴ Georgia Department of Labor, Minimum Wage, <https://dol.georgia.gov/minimum-wage> (accessed 12/20/2021).

CoreCivic does not fall into any of the exempt categories as defined by Georgia’s minimum wage statute. Furthermore, the statute indicates that the Georgia minimum wage does not apply to “any employer who is subject to the minimum wage provisions of any act of Congress as to employees covered thereby if such act of Congress provides for a minimum wage which is greater than the minimum wage which is provided for in this Code section.” See:

Official Code of Georgia Annotated, § 34-4-3 (2001).

I note also that the U.S. Department of Labor’s Wage and Hour Division website states that “Employers subject to the Fair Labor Standards Act must pay the current Federal minimum wage of \$7.25 per hour.” See:

U.S. Department of Labor Website, State Minimum Wage Laws, <https://www.dol.gov/agencies/whd/minimum-wage/state>, at “Georgia” (accessed 12/15/2021).

Finally, I note that CoreCivic’s employees do not fall under categories of employers and employees exempt from the federal minimum wage; therefore, CoreCivic is subject to the Fair Labor Standards Act and the federal minimum wage applies. Exemptions noted under the Fair Labor Standards Act include executive, administrative, and professional employees; farm workers; employees of certain seasonal amusement/recreational establishments; and casual babysitters and persons employed to the elderly or infirm. See:

Fair Labor Standards Act, 29 U.S.C. § (1938).

¹⁰⁵ U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021).

Note that the change in minimum wage only affects the analysis for the Forced Labor class, as the change happened prior to the earliest pay entry employed in the analytical dataset for the Unjust Enrichment labor class.

¹⁰⁶ The IGSA amendments are also called modifications or mods. As such, I use the terms “amendments,” “modifications,” and “mods” interchangeably when referring to these IGSA agreements.

¹⁰⁷ CoreCivic, Inter-Governmental Service Agreement: Stewart County, Georgia, 6/30/2006 (CCBVA0000000340–45).

For an overview of the IGSA modifications with wage determinations, see Attachment E-1.

contract between ICE and Stewart County, Georgia, that list CoreCivic as “Sub-Contractor.”¹⁰⁸ Many of these amendments contain a “REGISTER OF WAGE DETERMINATIONS UNDER THE SERVICE CONTRACT ACT;” in addition, these contracts often contain a year-specific version of the following note:¹⁰⁹

Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Service Contract Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

- (54) Furthermore, for the 2018 amendment cited above, a stated purpose is to “[i]ncorporate the attached WDOL Wage Determination No. 2015-4503 Rev. 10 dated July 03, 2018.”¹¹⁰ Other amendments to the same contract contain time-specific versions of the above note,¹¹¹ and each wage determination schedule contains approximately the same set of occupations but with hourly wages that stay the same or increase with each successive amendment.¹¹² Based on the foregoing, I assume that wage determination schedules enclosed in the amendments to the contract between ICE and CoreCivic set the rates at which CoreCivic employees are to be paid for work performed at Stewart Detention Center. These wage determination schedules

¹⁰⁸ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141).

¹⁰⁹ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0131).

¹¹⁰ CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0129).

¹¹¹ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 11/16/2011 (CCBVA0000000357–60, at CCBVA0000000357).

CoreCivic, Amendment of Solicitation/Modification of Contract, 6/19/2014 (CCBVA0000000392–96, at CCBVA0000000392).

¹¹² See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 9/24/2019 (ICE-Barrientos 0229–50, at ICE-Barrientos 0233, [REDACTED]).

CoreCivic, Amendment of Solicitation/Modification of Contract, 6/16/2020 (ICE-Barrientos 0262–75, at ICE-Barrientos 0265, [REDACTED]).

list a variety of occupations, hourly wage rates at which workers in each occupation are paid, and benefits to be paid to workers pursuant to the contract between ICE and CoreCivic. Figure 2 below is a screenshot of a sample portion of the wage determination schedule under the 2018 amendment.

- (55) Note that the amendments with wage determinations (or wage determination-related language) that I have reviewed as of the submission of this report cover 2011 through 2020.¹¹³ Thus, for any years prior to the effective date of the 2011 amendment, I conservatively assume the comparison wage to be the applicable federal minimum wage. I further note that there are fewer jobs listed in earlier amendments. As such, for any years for which there is not a wage determination for a comparable occupation to VWP roles identified in the VWP pay data, I conservatively assume the minimum wage as the comparison.¹¹⁴ As an additional conservative measure, I always utilize the wage determination schedule of the earlier year between amendments (*e.g.*, I use 2011 wages for those pay records between the effective date of the 2011 contract amendment wage determination and the effective date of the 2014 contract amendment wage determination).

¹¹³ I respectfully reserve the right to update my analysis if any other relevant amendments become available to me after the submission of my report.

¹¹⁴ I discuss the identification of comparable occupations listed in the contract amendments to roles identified in the VWP pay data in greater detail below.

Figure 2: Screenshot of Example Wage Determination Schedule¹¹⁵

State: Georgia

Area: Georgia Counties of Schley, Stewart, Talbot, Taylor, Troup, Webster

****Fringe Benefits Required Follow the Occupational Listing****

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		13.28
01012 - Accounting Clerk II		15.15
01013 - Accounting Clerk III		17.27
01020 - Administrative Assistant		19.27
01035 - Court Reporter		16.17
01041 - Customer Service Representative I		11.17
01042 - Customer Service Representative II		12.57
01043 - Customer Service Representative III		13.71
01051 - Data Entry Operator I		12.11
01052 - Data Entry Operator II		13.34
01060 - Dispatcher, Motor Vehicle		17.44
01070 - Document Preparation Clerk		12.88
01090 - Duplicating Machine Operator		12.88
01111 - General Clerk I		11.78
01112 - General Clerk II		12.85
01113 - General Clerk III		14.43
01120 - Housing Referral Assistant		18.03
01141 - Messenger Courier		11.05
01191 - Order Clerk I		12.39
01192 - Order Clerk II		13.51
01261 - Personnel Assistant (Employment) I		14.60
01262 - Personnel Assistant (Employment) II		16.33
01263 - Personnel Assistant (Employment) III		18.20
01270 - Production Control Clerk		20.91
01290 - Rental Clerk		12.72
01300 - Scheduler, Maintenance		14.46
01311 - Secretary I		14.46
01312 - Secretary II		16.17
01313 - Secretary III		18.03

- (56) From the *deposit from* memo in the VWP pay data, occupations were identified for pay entries, where possible. The following occupations were identified in the *deposit from* memos. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].¹¹⁶ The occupation could not be identified in the remaining 43.9% and 32.8% of estimated shifts for the Forced Labor class and Unjust Enrichment class, respectively.¹¹⁷

- (57) I determined the appropriate comparison wage rate for each occupation using the contract amendments discussed above. Using VWP job descriptions produced by CoreCivic, I matched

¹¹⁵ CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128-141, at ICE-Barrientos 0131).

¹¹⁶ Attachments E-2 and E-3.

¹¹⁷ Attachments E-2 and E-3.

VWP occupations with the roles listed on the contract amendments.¹¹⁸ In cases where multiple occupations could have been appropriate for comparison, I chose the occupation with the lowest hourly wage. In addition, I reviewed the Department of Labor's Service Contract Act ("SCA") index of occupation descriptions corresponding to the roles listed on the contract amendment to ensure concordance between a given VWP role and its designated comparison occupation.¹¹⁹

- (58) The job designations in the VWP pay data do not always precisely match the job titles in the VWP job descriptions. For example, the VWP pay data identify a [REDACTED] role; however, the VWP job descriptions list a "porter" position and do not list a position specifically entitled "janitor." Based on the description of the role, I conclude that the [REDACTED] title in the pay data most likely matched the "porter" job description. Furthermore, Jacqueline Norman, Assistant Warden at CoreCivic's Trousdale Turner Correctional Center and former Chief of Unit Management at Stewart, confirmed that a CoreCivic janitor would perform the role of a VWP porter absent the availability of a detained individual to perform porter work.¹²⁰ Additionally, the Department of Labor's SCA occupation description for the "Janitor" role lists similar functions and roles to those described for a "Hall Porter" or "Front Office Porter" in the VWP job descriptions.¹²¹ Accordingly, I selected the hourly wage listed for "Janitor" in the contract amendment for pay entries with [REDACTED] in the *deposit from* memo. Entries with [REDACTED] or [REDACTED] in the *deposit from* memo in the VWP pay data were also identified as janitorial roles on the assumption that such roles encompassed janitorial duties such as groundskeeping and trash collection or removal. Although my comparisons are accurate to a reasonable degree of economic certainty based on the information I have reviewed, in the event that a more appropriate comparable wage (be it another contract wage, the federal minimum wage, or the Executive Order minimum wage, to be discussed later in this section) is determined, it is my opinion that I could easily adjust my analysis to account for this change.

¹¹⁸ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710).

¹¹⁹ Department of Labor, "SCA Directory of Occupations," available at: <https://www.dol.gov/sites/dolgov/files/WHd/legacy/files/SCADirectVers5.pdf>.

¹²⁰ Jacqueline Norman, Dep. Tr. 11/5/2021, at 82:7–82:19. ("Q For the administrative porter, if there were no volunteers for this position, who would do that job? A The staff would do it. Q What staff? A Whichever staff that was available, and the warden -- myself or the assistant warden or the warden asked to step in and assist with those tasks. Q Would a CoreCivic janitor have to do the job? A Yes. We had a janitor, but if the janitor was not available, then like I stated a staff member would assist and assist with those jobs.")

¹²¹ Department of Labor, "SCA Directory of Occupations," at 32, available at: <https://www.dol.gov/sites/dolgov/files/WHd/legacy/files/SCADirectVers5.pdf>.
CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004689–692).

- (59) Some cases were more complex. For example, the VWP job descriptions produced by CoreCivic list both “Food Preparation Worker” and “Cook” as kitchen-related occupations.¹²² However, the *deposit from* memos in the pay data generally do not specify [REDACTED]. In keeping with the conservative nature of my analysis, while the contract amendment lists hourly rates for each of the similarly named positions “Cook I,” “Cook II,” and “Food Service Worker,” I selected the position holding the lowest hourly rate, “Food Service Worker,” as the comparison wage for *all* kitchen workers.¹²³ Furthermore, the Department of Labor’s SCA occupation description for the “Food Service Worker” role lists similar functions to those described in the VWP job description for “Food Preparation Worker” and “Cook.”¹²⁴ Additionally, Susan Huffman [REDACTED].¹²⁵
- (60) For other positions identified within the pay data, a more thorough review of the responsibilities listed in the VWP job descriptions was necessary, especially for porter roles. Many pay entries specify [REDACTED] as the job performed in the *deposit from* memo. Pay entries with memos containing [REDACTED] were thus identified as [REDACTED], in addition to pay entries with memos containing [REDACTED]. The VWP job descriptions list multiple positions corresponding to porters, including “Front Office Porter,” “Hall Porter,” and “Pod Orderly.”¹²⁶ The descriptions for “Front Office Porter” and “Hall Porter” appear to be janitorial in nature, and both list “Perform general janitorial duties according to the Unit Housekeeping Schedule” as the primary job function.¹²⁷ As seen in Figure 3 below, there is substantial overlap in the job descriptions for both roles.

¹²² CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004697–4700).

¹²³ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0132).

¹²⁴ Department of Labor, “SCA Directory of Occupations,” at 25, available at: <https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/SCADirectVers5.pdf>.

CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004697–4700).

¹²⁵ Susan Huffman, Dep. Tr., 7/14/2021 at 73:1–73:20. [REDACTED]

¹²⁶ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004689–692, CCBVA0000004695–96).

¹²⁷ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004689–692).

Figure 3: Screenshots of VWP Job Descriptions for Front Office and Hall Porter Jobs¹²⁸

INMATE/RESIDENT JOB DESCRIPTION		INMATE/RESIDENT JOB DESCRIPTION	
JOB TITLE:	Front Office Porter	JOB TITLE:	Hall Porter
PLACE OF WORK:	Administration Area	PLACE OF WORK:	All Hallways
AREAS OF ACCESS:	Administration Area	AREAS OF ACCESS:	All Hallways
SUPERVISOR:	Warden's Designee/Utility Officer	SUPERVISOR:	Shift Supervisor or Designee
SUPERVISION:	Direct/Indirect	SUPERVISION:	Direct/Indirect
DUTIES: A. Perform general janitorial duties according to the Unit Housekeeping Schedule. B. Assist in preparing area for special programs. C. Report needed supplies or repairs. D. Adhere to all safety rules and regulations. E. Maintain a good working relationship with fellow inmate/resident workers and staff Supervisors. F. Sweep, mop, empty trash, vacuum, and dust. G. Perform other tasks at the direction of a staff member.		DUTIES: A. Perform general janitorial duties according to the Unit Housekeeping Schedule. B. Perform general floor care duties according to the Floor Care Schedule. C. Assist in preparing area for special programs. D. Report needed supplies or repairs. E. Inventory cleaning supplies and ensure that they are put away properly. F. Maintain a good working relationship with fellow inmate/resident workers and staff Supervisors. G. Pick up trash and recycling daily from the dorms. H. Adhere to all safety rules and regulations. I. Change mop heads and take to laundry for washing. J. Performs other tasks at the direction of a staff member.	
SPECIAL INSTRUCTIONS: Cleaning of administration offices is to be done under direct supervision. There are no requirements for special clothing. Will eat meals with the general inmate/resident population. A staff member has explained this job description to me and I have read and fully understand the duty requirements of this job.		SPECIAL INSTRUCTIONS: Will eat meals with the general inmate/resident population. A staff member has explained this job description to me and I have read and fully understand the duty requirements of this job.	
Print Inmate/resident Name	Date	Print Inmate/resident Name	Date
Inmate/resident Signature	Date	Inmate/resident Signature	Date

CCBVA0000004689

CCBVA0000004691

(61) Furthermore, the VWP job description for the “Pod Orderly” role entails many cleaning and janitorial responsibilities. See Figure 4, below.

¹²⁸ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004689, CCBVA0000004691).

Figure 4: Screenshot of VWP Job Description for Pod Orderly¹²⁹

INMATE/RESIDENT JOB DESCRIPTION	
JOB TITLE:	Pod Orderly
PLACE OF WORK:	Pod Currently Living On
AREAS OF ACCESS:	Pod Currently Living On
SUPERVISOR:	Shift Supervisor or Designee
SUPERVISION:	Direct/Indirect
DUTIES:	
A.	Assist in preparing area for special programs.
B.	Report needed supplies or repairs.
C.	Wipe tables and sweep and mop floors.
D.	Clean microwaves inside and outside.
E.	Remove microwave from stand and clean stand
F.	Dust rails, door jams, televisions, back of the stairs, and, dayroom sink area.
G.	All supplies are to be inventoried and put away properly after each use.
H.	Maintain a good working relationship with fellow inmate/resident workers and staff supervisors.
I.	Adhere to all safety rules and regulations.
J.	Perform other tasks at the direction of a staff member.
SPECIAL INSTRUCTIONS:	
Will eat meals with the general inmate/resident population.	
A staff member has explained this job description to me and I have read and fully understand the duty requirements of this job.	
Print Inmate/resident Name	Date
Inmate/resident Signature	Date

CCBVA0000004695

- (62) There is no position in the contract amendment entitled “Porter.” However, as discussed above, CoreCivic staff testified that janitors and porters are functionally the same.¹³⁰ Accordingly, I selected the hourly wage for “Janitor” for porters.
- (63) The contract amendments also list a variety of ranges for workers in medical positions, such as “Medical Assistant,” “Nursing Assistant I,” and “Nursing Assistant II.” However, the VWP job description for “Medical/Clinic Worker” is more similar to those of the porter roles. See Figure 5 below.

¹²⁹ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004695).

¹³⁰ Jacqueline Norman, Dep. Tr. 11/5/2021, at 82:7–82:19. (“Q For the administrative porter, if there were no volunteers for this position, who would do that job? A The staff would do it. Q What staff? A Whichever staff that was available, and the warden -- myself or the assistant warden or the warden asked to step in and assist with those tasks. Q Would a CoreCivic janitor have to do the job? A Yes. We had a janitor, but if the janitor was not available, then like I stated a staff member would assist and assist with those jobs.”)

Figure 5: Screenshot of VWP Job Description for Medical/Clinic Worker¹³¹

INMATE/RESIDENT JOB DESCRIPTION

JOB TITLE: Medical/Clinic Worker

PLACE OF WORK: Medical Clinic

AREAS OF ACCESS: Medical/Clinic

SUPERVISOR: Shift Supervisor or Designee

SUPERVISION: Direct/Indirect

DUTIES:

- A. Perform general janitorial duties according to the Unit Housekeeping Schedule.
- B. Sanitize sinks and showers in all assigned areas of clinic, exam room, observation room, etc. Ensure proper protective equipment/clothing is used when required.
- C. Maintain a good working relationship with fellow inmate/resident workers and staff Supervisors.
- D. Distribute and maintain adequate cleaning and toiletry supplies for assigned area.
- E. Change lines in observation weekly.
- F. Report needed supplies and repairs.
- G. Adhere to all safety rules and regulations.
- H. Perform other tasks at the direction of a staff member.

SPECIAL INSTRUCTIONS:

No inmate/resident may type, read, file, handle or have access to any record, document or information sensitive in nature or dealing with another inmate/resident's personal information. Must be trained in blood spills and clean up and will perform such tasks as needed.

Will eat meals with general inmate/resident population.

A staff member explained this job description to me and I have read and fully understand the duty requirements of this job.

Print Inmate/resident Name

Date

Inmate/resident Signature

Date

CCBVA0000004709

(64) Given this, I selected the wage for “Janitor” to apply to medical workers. Again, this matching strategy is conservative given the increased responsibilities and training suggested by the VWP job description. Furthermore, Jacqueline Norman [REDACTED]

[REDACTED],¹³²

(65) Though over [REDACTED] of estimated shifts for both the Forced Labor and Unjust Enrichment classes correspond to [REDACTED] per the *deposit from* memo, the VWP job descriptions produced by CoreCivic do not list a shower worker role.¹³³ However, the role of “Sanitation Orderly” listed in the VWP job descriptions states that the “Sanitation Orderly” will perform “specific

¹³¹ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004709).

¹³² Jacqueline Norman, Dep. Tr. 11/5/2021, at 193:11–193:13. (“[REDACTED]”)

¹³³ Attachments E-2 and E-3.

janitorial duties” in such areas as “Sinks,” “Toilets,” and “Showers.”¹³⁴ This suggests a strong degree of overlap in the functions—even if a different venue—of a “Sanitation Orderly”/shower worker to that of a janitor or porter. Thus, given that no positions are labeled “Sanitation Orderly” (or anything similar) within the contract amendment, I use the wage for “Janitor” for shower workers. This is also conservative given higher wages are listed for comparable occupations such as “Laborer, Grounds Maintenance.”¹³⁵

- (66) Similarly, the position of “Laundry Worker” does not have a direct counterpart in the contract amendment. There are a number of similarly titled positions in the contract amendments, such as “Washer, Machine” and “Dry Cleaner.”¹³⁶ The VWP job description for “Laundry Worker” lists responsibilities such as “Wash and dry all inmate/resident laundry mops, rags, and miscellaneous laundry using the machines as instructed by the Laundry Manager” and “Return laundry to the dorm laundry after washing.”¹³⁷ These roles appear to correspond to the responsibilities listed for “Washer, Machine” in the Department of Labor’s SCA job descriptions, so the hourly rate for that position was selected for this group.¹³⁸ I note that its hourly rate is lower than that of “Dry Cleaner.”¹³⁹
- (67) The VWP job description that applies to commissary workers is “Commissary Worker/Clerk.”¹⁴⁰ The listed functions of this role contain janitorial components in addition to store clerk-style responsibilities. See Figure 6 below.

¹³⁴ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004707).

¹³⁵ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0132).

¹³⁶ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0134).

¹³⁷ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004693).

¹³⁸ Department of Labor, “SCA Directory of Occupations,” at 64, available at: <https://www.dol.gov/sites/dolgov/files/WHd/legacy/files/SCADirectVers5.pdf>

¹³⁹ CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0134).

¹⁴⁰ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004701).

Figure 6: Screenshot of VWP Job Description for Commissary Worker/Clerk Job¹⁴¹

INMATE/RESIDENT JOB DESCRIPTION	
JOB TITLE:	Commissary Worker/Clerk
PLACE OF WORK:	Commissary Department
AREAS OF ACCESS:	Commissary Department
SUPERVISOR:	Commissary Supervisor or Designee
SUPERVISION:	Direct/Indirect
DUTIES:	
A.	Assist Commissary Supervisor in filling commissary orders.
C.	Advise supervisor when stock items are getting low.
D.	Perform general janitorial duties according to the Unit Housekeeping Schedule.
E.	Maintain a good working relationship with fellow inmate/resident workers and staff supervisors.
F.	Stock shelves.
G.	Adhere to all safety rules and regulations.
H.	Assist in loading and unloading of freight or other items.
I.	Perform other tasks at the direction of a staff member.
J.	Report any supplies or repairs needed.
SPECIAL INSTRUCTIONS:	
There are no special requirements for clothing except for heavy jackets due to inclement/cold weather conditions.	
Will eat meals with the general inmate/resident population.	
<u>DISALLOWED INMATE/RESIDENT DUTIES</u>	
Listed below are those duties which commissary inmate/residents may <u>not</u> perform:	
1.	No inmate/resident may type, read file, handle or have access to any record, document, or information sensitive in nature or dealing with another inmate/resident's personal information.
2.	Inmate/resident may not operate computer equipment, nor view the computer screen.
3.	Inmate/resident may not open the door of the Commissary.

CCBVA00000047C1

(68) The contract amendments list a variety of positions that correspond to this role, such as “Stock Clerk,” “Personnel Assistant (Employment) I,” and “General Clerk I.”¹⁴² The VWP job description of commissary worker overlaps with the functions of both the “Stock Clerk” and “General Clerk I” positions as described in the SCA occupation descriptions provided by the Department of Labor.¹⁴³ However, given the contract amendments list different wages for these roles, I selected the wage for the position with the lowest hourly rate, “General Clerk I” to be conservative.¹⁴⁴

¹⁴¹ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004701).

¹⁴² See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0131–134).

¹⁴³ Department of Labor, “SCA Directory of Occupations,” at 6 and 67, available at: <https://www.dol.gov/sites/dolgov/files/WHd/legacy/files/SCADirectVers5.pdf>

¹⁴⁴ The “Commissary Worker/Clerk” role contains both janitorial and clerk responsibilities and holds a higher hourly rate.

- (69) Finally, I identified a number of pay entries pertaining to [REDACTED] jobs, and the VWP job descriptions contain a “Barber” position.¹⁴⁵ However, I was unable to identify a comparable position for “Barber” in the contract amendments. Here, I applied the federal minimum wage.¹⁴⁶
- (70) Table 1 below summarizes the comparison occupations. For a detailed overview of comparison jobs and associated wages, see Attachment E-8. Note that, in cases where a comparison job could not be identified or a comparison job was not included in the IGSA modification in effect, the federal minimum wage is applied.¹⁴⁷ This approach is conservative, especially regarding instances where an occupation was not able to be identified.

¹⁴⁵ CoreCivic, Inmate/Resident Job Descriptions (CCBVA0000004685–4710, at CCBVA0000004685).

¹⁴⁶ Applying the federal minimum wage is conservative; as I understand it, in a situation like this, CoreCivic would be obligated to submit the position to the Department of Labor to determine the appropriate wage. Because such a wage would likely be higher than the federal minimum wage, my approach is conservative. These submissions, called “conformance requests,” are further discussed in Section 5.3.3. As an example, see:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0140–41).

¹⁴⁷ Attachment E-8.

Table 1: Comparison Occupation

VWP Occupation	Comparison Occupation¹⁴⁸
Kitchen Worker	Food Service Worker
Porter	Janitor
Shower Worker	Janitor
Laundry Worker	Washer, Machine
Commissary Worker	General Clerk I
Janitor	Janitor
Medical Worker	Janitor
Barber	N/A
No Job Identified	N/A

(71) As mentioned earlier in this section, IGSA amendments in later years with wage determinations include language about Executive Order (“EO”) 13658.¹⁴⁹ This EO established a minimum wage for contractors of \$10.10 to take effect starting in 2015, subject to annual increases to adjust for inflation.¹⁵⁰ For those years that are covered by this EO, the comparison wages pulled from the IGSA amendment wage determinations may also be too low, for at least some positions. I have been asked to perform an additional analysis assuming that the IGSA contract amendments are bound to the EO. The minimum wage for contractors changes annually and goes into effect on January 1 of each year. Below is a list of the annual wage rates determined by the DOL according to EO 13658:

- 2015: \$10.10.¹⁵¹

¹⁴⁸ Note that the comparison occupation and associated wage are applied only to those time periods for which an IGSA amendment lists them as a contracted job. For any periods where there is not a comparison occupation, the minimum wage remains the comparison wage.

¹⁴⁹ See, for example:
CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 131).

¹⁵⁰ Federal Register, “Establishing a Minimum Wage for Contractors,” 2/20/2014, available at: <https://www.federalregister.gov/documents/2014/02/20/2014-03805/establishing-a-minimum-wage-for-contractors>.

¹⁵¹ Federal Register, “Establishing a Minimum Wage for Contractors,” 2/20/2014, available at: <https://www.federalregister.gov/documents/2014/02/20/2014-03805/establishing-a-minimum-wage-for-contractors>.

- 2016: \$10.15.¹⁵²
- 2017: \$10.20.¹⁵³
- 2018: \$10.35.¹⁵⁴
- 2019: \$10.60.¹⁵⁵
- 2020: \$10.80.¹⁵⁶

(72) Using the same methodology as the comparison wage analysis with differing comparison wage periods (see discussion of the comparison wage analysis in section 5.4.1), I perform this additional EO minimum wage analysis to estimate the value of VWP labor in wages to CoreCivic for both classes. Specifically, for periods before the EO minimum wage went into effect (pre-2015), the analysis is identical to the comparison wage analysis. For years in which the EO minimum wage is in effect (2015 onwards), the wage used for comparison is the higher of the EO minimum wage or the comparison contract wage for those VWP pay entries that can be matched with a comparison job.¹⁵⁷ For those pay entries that cannot be matched with a comparison job, I conservatively assume the comparison wage is the federal minimum wage. See Attachments F-9 and F-10. To the extent that the EO minimum wages apply, this analysis provides a conservative estimate of damages under this pay structure.

5.3.3. Comparison benefits

(73) Damages were also calculated based on the value of the VWP labor to CoreCivic in terms of owed benefits, as an addition to the occupation-specific effective comparison wage analysis

¹⁵² Federal Register, "Establishing a Minimum Wage for Contractors, Notice of Rate Change in Effect as of January 1, 2017," 9/20/2016, available at: <https://www.federalregister.gov/documents/2016/09/20/2016-22515/establishing-a-minimum-wage-for-contractors-notice-of-rate-change-in-effect-as-of-january-1-2017>.

¹⁵³ Federal Register, "Establishing a Minimum Wage for Contractors, Notice of Rate Change in Effect as of January 1, 2017," 9/20/2016, available at: <https://www.federalregister.gov/documents/2016/09/20/2016-22515/establishing-a-minimum-wage-for-contractors-notice-of-rate-change-in-effect-as-of-january-1-2017>.

¹⁵⁴ Federal Register, "Minimum Wage for Federal Contracts Covered by Executive Order 13658, Notice of Rate Change in Effect as of January 1, 2022," 9/16/2021, available at: <https://www.federalregister.gov/documents/2021/09/16/2021-19995/minimum-wage-for-federal-contracts-covered-by-executive-order-13658-notice-of-rate-change-in-effect>.

¹⁵⁵ Federal Register, "Establishing a Minimum Wage for Contractors, Notice of Rate Change in Effect as of January 1, 2020," 9/19/2019, available at: <https://www.federalregister.gov/documents/2019/09/19/2019-19673/establishing-a-minimum-wage-for-contractors-notice-of-rate-change-in-effect-as-of-january-1-2020>.

¹⁵⁶ Federal Register, "Establishing a Minimum Wage for Contractors, Notice of Rate Change in Effect as of January 1, 2020," 9/19/2019, available at: <https://www.federalregister.gov/documents/2019/09/19/2019-19673/establishing-a-minimum-wage-for-contractors-notice-of-rate-change-in-effect-as-of-january-1-2020>.

¹⁵⁷ Language in the IGSA contract amendments suggest that this is the correct approach for a contractor to conform to EO 13658. See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128-141, at ICE-Barrientos 0131).

discussed in Section 5.3.2. This accounts for the fact that, absent access to forced detained individual labor, CoreCivic would have paid employees both an hourly wage and benefits. See discussion in Section 5.3.2. The Affordable Care Act requires that employers with 50 or more full-time employees offer health insurance or pay a fine.¹⁵⁸ Further, the contract between ICE and CoreCivic states that all employees performing listed occupations receive a defined hourly rate of health benefits.¹⁵⁹ Other than health benefits, additional benefits listed include vacation, holidays, and uniform allowance. However, I conservatively include only the health benefits in the analysis; these additional benefits are excluded. The comparison benefits determined to be owed to VWP participants across occupations that were able to be paired to a listed contract occupation are listed in Attachment E-8.

- (74) The contract (and related amendments) between ICE and CoreCivic requires that CoreCivic submit a “conformance request” consisting of “proposed rate(s)” for all non-listed occupations (*e.g.*, “Barber”) such that the Wage and Hour Division of the Department of Labor can approve, modify, or disapprove the action related to a final determination of wage rate and/or fringe benefits prior to the start of work for employees performing such occupations.¹⁶⁰ Thus, under the contract, any then-non-listed occupations would become listed occupations after this request and determination. As such, contracted workers performing any occupation, whether “Barber” or “Kitchen Worker,” would be employed under a listed occupation. Given the contract amendments state benefits are owed to “ALL OCCUPATIONS LISTED ABOVE,”¹⁶¹ as an additional analysis, I calculate the value of benefits assuming that comparison benefits would have been paid to any external worker hired to perform work at Stewart, regardless of comparison job identified. This would also extend benefits to pay entries for which occupation could not be determined, given that for any contracted job CoreCivic would have been required to submit a conformance request, but would not extend to those pay entries that fall within a

¹⁵⁸ Patient Protection and Affordable Care Act, § 1513 (2010) at 155–159.

¹⁵⁹ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0138).

¹⁶⁰ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 11/16/2011 (CCBVA0000000357–360, at CCBVA0000000359–360).

Note that the contractual language of the conformance requests slightly differs between amendments.

¹⁶¹ See, for example:

CoreCivic, Amendment of Solicitation/Modification of Contract, 8/1/2018 (ICE-Barrientos 0128–141, at ICE-Barrientos 0138).

time frame without a wage determination IGSA modification in place. See Attachments E-11 and E-12.

5.4. Estimated damages

5.4.1. Forced Labor class

- (75) The Forced Labor class consists of detained individuals who performed work at Stewart from ten years prior to the date of the original complaint through the final judgment in this matter. The pay data analyzed for the Forced Labor class contain 889,053 analyzable pay entries for 32,103 unique individuals from December 23, 2008 to December 23, 2020.¹⁶² I estimated the Forced Labor class to have worked 5,532,204 hours during the class period and to have received \$2,289,524 in total wages, leading to an estimated average hourly wage of \$0.41 over the entire class period.¹⁶³
- (76) Using the federal minimum wage as a comparison, I separate the Forced Labor class damages period into periods before and after the minimum wage increase on July 24, 2009. The estimated hourly wage paid to VWP participants is calculated for both periods. Prior to the wage increase, the hourly wage was \$0.43 and after the increase, it was \$0.41.¹⁶⁴ Next, I calculated the difference between the estimated paid hourly wage and the federal minimum wage—\$6.12 per hour prior to the federal minimum wage increase and \$6.84 after.¹⁶⁵ Finally, these differential rates are multiplied by the total number of hours worked in each respective sub-period to derive the total value to CoreCivic of the work performed by the detainees.¹⁶⁶ This results in approximately \$37.6 million worth of value to CoreCivic of the work performed by detainee VWP workers in the Forced Labor class, absent benefits and assuming a but-for hourly rate of the minimum wage.
- (77) Using the comparison contract wages, based on the comparison occupations shown in in Table 1, and the proportions of shifts in each occupation in the given comparison wage period, I calculate a weighted average comparison wage for each comparison wage period, based on

¹⁶² Attachment B-2.

¹⁶³ Attachment D-4.

¹⁶⁴ Attachments D-4.

¹⁶⁵ $\$6.55 - \$0.43 = \$6.12$; $\$7.25 - \$0.41 = \$6.84$.

¹⁶⁶ Attachments D-5 and D-6.

the appropriate IGSA modification contract and the defined wage rates therein.¹⁶⁷ I apply the effective comparison wage to the effective hourly rate paid to detainees and the number of hours worked (per comparison wage period) to calculate an alternative estimate of the value to CoreCivic of the work performed by detainee workers, that is, economic damages.¹⁶⁸

(78) Applying the same methodology employed in the federal minimum wage damages analysis to determine the value of unpaid wages, the differential wage rate between the comparison effective wages and the estimated hourly wage paid to VWP participants is multiplied by the total hours worked in the Forced Labor class damages period.¹⁶⁹ This results in an estimated value of the work performed by detainee VWP workers in the Forced Labor class, absent benefits and assuming a but-for hourly rate based on the effective comparison wages, of approximately \$40.7 million.¹⁷⁰

(79) For the EO minimum wage analysis, I apply a similar methodology as in the comparison wage analysis, with different comparison wage periods to account for the annual EO minimum wage rate changes. I calculate a weighted average comparison wage for each comparison wage period and EO year, based on the appropriate IGSA contract amendment-defined wage rates and annual EO minimum wage.¹⁷¹ Then the differential wage rate between the calculated effective wage and the estimated hourly wage paid to VWP participants is multiplied by the total hours worked in the Forced Labor class damages period.¹⁷² The estimated value of labor in terms of wages, absent benefits and assuming a but-for hourly rate based on the effective wage calculated using the comparison contract wages and EO minimum wages, are approximately \$42.2 million.

(80) As discussed in Section 5.3.3, I also estimate damages constituting the value of benefits owed to hired workers in the but-for world. This is estimated in two ways. First, I assume benefits would have been owed only to those pay records for which a comparison job can be matched. Second, I assume that, given the discussion in Section 5.3.3 relating to conformance requests, benefits would have been owed to *all* hired workers and are universally applied. For the first analysis, using proportions of shifts in each occupation in the given comparison wage period,

¹⁶⁷ Attachments E-9 and E-10.

¹⁶⁸ Attachments E-11 and E-12.

¹⁶⁹ Attachment E-11.

¹⁷⁰ Attachment E-11.

¹⁷¹ Attachment F-8.

¹⁷² Attachment F-10.

I calculate a weighted average value of hourly benefits for each comparison wage period, based on the appropriate IGSA contract amendment and the defined benefits therein.¹⁷³ Then, this effective rate was multiplied by the total hours worked during the Forced Labor period to determine that the value of VWP labor to CoreCivic in terms of benefits is approximately \$6.3 million through the Forced Labor class period, if considering hourly benefits only for listed comparison occupations.¹⁷⁴ In the second analysis, when applying benefits universally to all jobs across time periods with an IGSA wage determination in effect, the value of the VWP labor to CoreCivic in terms of benefits is approximately \$16.7 million.¹⁷⁵

5.4.2. Unjust Enrichment class

- (81) The Unjust Enrichment class consists of detained individuals who performed work at Stewart from four years prior to the date of the original complaint through the final judgment in this matter. The pay data analyzed for the UE class contain 531,631 analyzable pay entries for 13,719 unique individuals from April 17, 2014 to December 23, 2020.¹⁷⁶ I estimated the Unjust Enrichment class to have worked 3,264,180 hours during the class period and to have received \$1,442,513 in total wages, leading to an estimated average hourly wage of \$0.44 over the entire class period.¹⁷⁷
- (82) For the Unjust Enrichment class, a higher number of specific occupations performed could be identified, with notable increases to the proportion of shifts corresponding to porters and shower workers.¹⁷⁸ Using the federal minimum wage as a comparison, the value to CoreCivic of the VWP labor during the UE class period is approximately \$22.2 million.¹⁷⁹ Using the effective comparison wages calculated via the distribution of occupations performed and occupation-specific comparison wages, the value to CoreCivic of the VWP labor totaled approximately \$25.1 million during the Unjust Enrichment class period.¹⁸⁰ Using the effective

¹⁷³ Attachment E-9.

¹⁷⁴ Attachment E-11.

¹⁷⁵ Attachment E-11.

¹⁷⁶ Attachment B-2.

¹⁷⁷ Attachment D-4. Much of the Unjust Enrichment class damages analysis follows the same principles used in the Forced Labor class damages analysis, performed over the shorter damages period. The attachments referenced within the section above regarding the Forced Labor class damages analysis often include additional columns for the Unjust Enrichment class calculations or are calculated following the same principles in a separate attachment.

¹⁷⁸ Attachment E-3.

¹⁷⁹ Attachment D-6.

¹⁸⁰ Attachment E-12.

comparison wages calculated using occupation-specific comparison wages and the EO minimum wage, the value to CoreCivic of the VWP labor totaled approximately \$26.6 million during the Unjust Enrichment class period.¹⁸¹

- (83) As with the Forced Labor class, the value of VWP labor to CoreCivic in terms of benefits were calculated for the Unjust Enrichment class, in addition. An effective rate for benefits was calculated, then multiplied by the total hours worked during the Unjust Enrichment period.¹⁸² When considering unpaid benefits for comparison occupations only, these calculations resulted in approximately \$5.9 million of value to CoreCivic of VWP labor in terms of benefits in the Unjust Enrichment class period.¹⁸³ The same calculations were performed in applying benefits to all jobs in periods with an IGSA wage determination, resulting in a value of \$13.4 million to CoreCivic in terms of benefits.¹⁸⁴

¹⁸¹ Attachment F-11.

¹⁸² Attachments E-10 and E-12.

¹⁸³ Attachment E-12.

¹⁸⁴ Attachment E-12.

6. Conclusion

- (84) CoreCivic derives substantial economic value from the detainees who perform work pursuant to the work program in place at Stewart. Specifically, that value derives from the difference between the wages paid to detainees (as reflected in documents and data provided by CoreCivic) from what I understand are its ordinary-course-of-business books and records and the wages (plus benefits) that it would have paid to employees hired to perform those same tasks.
- (85) The value to CoreCivic of the VWP labor is calculated using a class-wide model and no individual-level analysis. The formulaic approach to the calculation described in Section 5 is appropriate, reasonable, and does not rely on individual-specific evidence. The value is calculated for two classes and two class periods. The Forced Labor class period runs from April 17, 2008 to the date of final judgment in this matter. The Unjust Enrichment class period runs from April 17, 2014 to the date of final judgment in this matter. The damages for the two classes are not additive.
- (86) The estimated damages to the Forced Labor class in wages are between \$37.6 million and \$42.2 million; the estimated damages to the Unjust Enrichment class in wages are between \$22.2 million and \$26.6 million. The estimated damages to the Forced Labor class in benefits are between \$6.3 million and \$16.7 million; the estimated damages to the Unjust Enrichment class in benefits are between \$5.9 million and \$13.4 million. The estimated damages are presented in Attachment G-1.



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Attachment A-1

December 2021

Steven Schwartz, Ph.D.

Managing Director

Dr. Steven Schwartz is a Managing Director at Intensity, LLC. With extensive experience in economic consulting, he has been retained as an economic expert in numerous litigation and non-litigation matters and has provided testimony before the U.S. International Trade Commission and the U.S. Tax Court, federal and state courts.

Dr. Schwartz has over 35 years of economic consulting experience and has applied his expertise in high-stakes disputes related to commercial success, irreparable harm, lost profits, reasonable royalties, economic domestic industry considerations, unjust enrichment, and commercial success. His areas of expertise include:

- Antitrust and Competition
- Intellectual Property Damages and Valuation
- Damages Assessment in Complex Commercial Disputes
- Class Certification
- Securities and Finance Litigation

Examples of Dr. Schwartz work include:

- Analysis of pricing behavior by a company that pled guilty to price fixing as a part of a larger conspiracy to determine the impact on the firm and to assess the portion of its price increases attributable to the conspiracy as opposed to non-collusive factors such as cost increases.
- Assessment to the damages suffered by a residential home builder and land developer as a result of alleged breaches of contracts and fraud by another home builder. The analysis included a determination of the number of homes the Plaintiff would have built and sold in the absence of the alleged breaches and fraud, as well as the losses the firm would incur as it attempted to re-enter the market, post-fraud.
- Analysis of the commercial success of a branded drug in the context of a Hatch-Waxman dispute; the branded drug was a late entrant into the market, i.e., after the entry of competitors selling generic versions of first and second-generation drugs, and Dr. Schwartz provided an assessment of the drug's performance and success in the context of a market dominated by generic competitors.

- Analyzed the damages suffered by an aircraft manufacturer as a result of a patent infringement by a rival manufacturer of a component of the aircraft at issue. The royalty analysis considered the appropriate royalty in a case in which the infringing product was never sold.

Dr. Schwartz's consulting background spans many industries, such as hospitality, consumer goods, electronics, gaming, and pharmaceuticals, among others. He has also consulted in a variety of business, valuation and strategic planning issues.

Education

Ph.D., Economics, University of Maryland

M.A., Economics, University of Maryland

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Professional Experience

Intensity, LLC. Managing Director, 2021 to present.

Charles River Associates, Vice President, 2015 to 2020.

Alvarez & Marsal, Global Forensic and Dispute Services, Managing Director, 2011 to 2015.

NERA Economic Consulting, Senior Vice President (Final Position), 1984 to 2011.

Miami University, Assistant Professor of Economics, 1980 to 1984.

Federal Trade Commission, Economist, 1979 to 1980.

Publications and Papers

“Antitrust Analysis of FRAND Licensing Post-FTC v. Qualcomm,” *The Journal of the Antitrust and Unfair Competition Section of the California Lawyers Association*, Volume 31, No. 1, Spring 2021 (with Aminta Raffalovich).

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Speaking Engagements

“Valuing Intellectual Property in the Case of Free-to-Consumer Goods, Webinar, April 6, 2021 and June 29, 2021.

Panelist, “Cyber Breach Aftermath: Civil Litigation, Insurance Risks and SEC Perspective”, American Bar Association Annual Meeting, Chicago, IL, August 2, 2018.

“Dealing with a Breach’s Long-Term Fallout” *Corporate Counsel*, March 2018.

Panel Presentation “Cyber Breach Aftermath: Civil Litigation, Insurance Claims and Regulatory Perspective” Association of Corporate Counsel CLE Program, Chicago, IL, January 2018.

Presentation to McGuire Woods LLP, Dallas, TX, August 8, 2017.

Public Symposium, Developments in Trade Secret Protection, sponsored by United States Patent and Trademark Office, Washington, D.C., May 8, 2017.

“Presenting Statistical Evidence...Effectively.” Presented live in St. Louis, MO and presented through intra-firm webinar, SNR Denton, October 19, 2011.

“Presenting Statistical Evidence...Effectively.” Presented to Antitrust and Litigation Lawyers, Bryan Cave LLP, October 18, 2011.

Testimony

1. Deposition Testimony in *Baxalta Incorporated and Baxalta GmbH v. Genentech Inc. and Chugai Pharmaceutical Co., Ltd.*, District of Delaware, C.A. No. 17-509-TBD, August 2021.
2. Deposition Testimony in *Panasonic Corporation v. Getac Technology Corporation and Getac, Inc.*, Central District of California, Case No. 8:19-CV-01118-DOC-DFM, March 2021.
3. Deposition Testimony in *In re. Aetna Litigation*, Central District of California, Case No. 19-cv-04035, February 2020. (Retained by counsel to KCC Class Action Services, LLC and Kurtzman Carson Consultants, LLC)

4. Deposition Testimony in *Impax Laboratories, Inc. v. Zydus Pharmaceuticals (USA) Inc., et al.*, United States District Court, District of New Jersey, Civil Action No. 2:17-cv-13476 (SRC)(CLW), January 2020. (Retained by counsel to Impax Laboratories)
5. Deposition Testimony in *Rockwell Automation, Inc., v. Radwell International, Inc.*, U.S. District Court, District of New Jersey, Case No. 1:15-cv-05246-RBK-JS, December 2019. (Retained by counsel to Rockwell Automation, Inc.)
6. Trial Testimony in *Perrigo Company, Sergeant's Pet Care Products, Inc. d/b/a Perrigo Animal Health, Velcera, Inc. and FidoPharm, Inc. v. Merial Limited d/b/a Merial LLC*, United States District Court for the Northern District of Georgia (Atlanta Division), Civ. Action No.: 1:15-cv-03674 (SCJ), March 2019. (Retained by counsel to Perrigo Company, Sergeant's Pet Care Products, Inc. d/b/a Perrigo Animal Health, Velcera and FidoPharm, Inc.)
7. Trial Testimony in *Boehringer Ingelheim Pharmaceuticals, Inc. et al. v. HEC Pharm Co., Ltd et al.*, United States District Court, District of New Jersey, Civil Action No. 3:15-cv-05982-PGS-TJB (consolidated), June 2018. (Retained by counsel to Boehringer Ingelheim Pharmaceuticals, Inc. et al.)
8. Deposition Testimony in *D.R. Horton, Inc.-Huntsville; D.R. Horton, Inc. v. Breland Homes, LLC, et al. and Louis W. Breland, et al. v. D.R. Horton, Inc.-Huntsville, et al.*, In the Circuit Court of Baldwin County, Alabama, Case No.: 2014-cv-901450.00, March 2018. (Retained by counsel to Breland Homes, LLC et al. and Louis W. Breland)
9. Deposition Testimony in *Boehringer Ingelheim Pharmaceuticals, Inc. et al. v. HEC Pharm Co., Ltd et al.*, United States District Court, District of New Jersey, Civil Action No. 3:15-cv-05982-PGS-TJB (consolidated), December 2017. (Retained by counsel to Boehringer Ingelheim Pharmaceuticals, Inc. et al.)

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2. Rebuttal Expert Report of Steven Schwartz, Ph.D., *Baxalta Incorporated and Baxalta GmbH v. Genentech Inc. and Chugai Pharmaceutical Co., Ltd.*, District of Delaware, C.A. No. 17-509-TBD, June 2021.
3. Report of Steven Schwartz, Ph.D., *Panasonic Corporation v. Getac Technology Corporation and Getac, Inc.*, Central District of California, Case No. 8:19-CV-01118-DOC-DFM, March 2021.
4. Rebuttal Economist's Report of Steven Schwartz, *In re. Aetna Litigation*, Central District of California, Case No. 19-cv-04035, February 2020.
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6. Expert Report of Steven Schwartz, Ph.D., *Impax Laboratories, Inc. v. Zydus Pharmaceuticals (USA) Inc., et al.*, United States District Court, District of New Jersey, Civil Action No. 2:17-cv-13476 (SRC)(CLW), November 2019.
7. Expert Report of Steven Schwartz in Rebuttal to the June 14, 2019 Report of Matthew Hoelle and to the July 15, 2019 Report of David W. DeRamus *Rockwell Automation, Inc., v. Radwell International, Inc.*, U.S. District Court, District of New Jersey, Case No. 1:15-cv-05246-RBK-JS, October 2019.
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10. Expert Report of Steven Schwartz in *Rockwell Automation, Inc., v. Radwell International, Inc.*, U.S. District Court, District of New Jersey, Case No. 1:15-cv-05246-RBK-JS, June 2019.
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13. Expert Witness Statement and Report of Steven Schwartz in Connection with *Hibernia v. Teza*, Hibernia Express (Ireland) Limited, successor to Hibernia Atlantic U.S. LLC v. Teza Technologies LLC, International Chamber of Commerce, ICC Case No. 22784/MK, April 2018.
14. Update to Expert Report of Steven Schwartz, Ph.D., *D.R. Horton, Inc.-Huntsville; D.R. Horton, Inc. v. Breland Homes, LLC, et al. and Louis W. Breland, et al. v. D.R. Horton, Inc.-Huntsville, et al.*, In the Circuit Court of Baldwin County, Alabama, Case No.: 2014-cv-901450.00, April 2018.
15. Rebuttal Expert Report of Steven Schwartz, Ph.D., *D.R. Horton, Inc.-Huntsville; D.R. Horton, Inc. v. Breland Homes, LLC, et al. and Louis W. Breland, et al. v. D.R. Horton, Inc.-Huntsville, et al.*, In the Circuit Court of Baldwin County, Alabama, Case No.: 2014-cv-901450.00, January 2018.
16. Rebuttal Expert Report in Connection with a Confidential Arbitration in Stockholm, Sweden, December 2017.
17. Expert Report in Connection with a Confidential Arbitration in Stockholm, Sweden, November 2017.
18. Expert Report of Steven Schwartz, Ph.D., *D.R. Horton, Inc.-Huntsville; D.R. Horton, Inc. v. Breland Homes, LLC, et al. and Louis W. Breland, et al. v. D.R. Horton, Inc.-Huntsville, et al.*, In the Circuit Court of Baldwin County, Alabama, Case No.: 2014-cv-901450.00, November 2017.
19. Expert Report of Steven Schwartz, *Boehringer Ingelheim Pharmaceuticals, Inc. et al. v. HEC Pharm Co., Ltd et al.*, United States District Court, District of New Jersey, Civil Action No. 3:15-cv-05982-PGS-TJB (consolidated), October 2017.
20. Expert Report of Steven Schwartz, Ph.D. Regarding Validity of U.S. Patent Nos. 8,557,283; 9,089,608, 9,463,246, and 9,533,046, *Impax Laboratories, Inc. v. Actavis Laboratories FL, Inc. and Actavis Pharma Inc.*, United States District Court, District of New Jersey, Civil Action No. 15-6934 (SRC) (CLW), September 2017.
21. Supplemental Economist's Report in Connection with *Perrigo Company, Sergeant's Pet Care Products, Inc. d/b/a Perrigo Animal Health, Velcera, Inc. and FidoPharm, Inc. v. Merial Limited d/b/a Merial LLC*, United States District Court for the Northern District of Georgia (Atlanta Division), Civ. Action No.: 1:15-cv-03674 (SCJ), August 2017.
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34. Expert Rebuttal Report, *Realtime Data, LLC d/b/a IXO v. Goldman Sachs*, United States District Court for the Southern District of New York, Civil Action Nos. 1:11-CV-6696-KBF, 1:11-CV-6701-KBF; 1:11-CV-6704-KBF, July 2012.
35. Expert Rebuttal Report, *Realtime Data, LLC d/b/a IXO v. J.P. Morgan Chase*, United States District Court for the Southern District of New York, Civil Action Nos. 1:11-CV-6696-KBF, 1:11-CV-6701-KBF; 1:11-CV-6704-KBF, July 2012.
36. Expert Rebuttal Report, *Realtime Data, LLC d/b/a IXO v. Morgan Stanley, et al. (III)*, United States District Court for the Southern District of New York, Civil Action Nos. 1:11-CV-6696-KBF, 1:11-CV-6701-KBF; 1:11-CV-6704-KBF, July 2012.
37. Economist's Report, *RegScan, Inc. v. The Bureau of National Affairs, Inc.*, United States District Court for the Eastern District of Virginia, Alexandria Division, Civil Action No. 1:11-cv-01129 (JCC-JFA), April 19, 2012.

Attachment A-2
Materials Considered

Pleadings and filings

5/18/2018	Defendant CoreCivic, Inc.'s Corporate Disclosure Statement.
8/21/2020	Plaintiffs' First Set of Interrogatories.
8/21/2020	Plaintiffs' First Request for Production of Documents.
9/21/2020	CoreCivic's Response to Plaintiffs' First Request for Production of Documents.
9/21/2020	Defendant CoreCivic's Response to Plaintiffs' First Set of Interrogatories.
10/16/2020	Amended Complaint for Declaratory and Injunctive Relief and Damages.
10/30/2020	Defendant's Answer to Amended Complaint for Declaratory and Injunctive Relief and Damages and Counterclaim.
11/6/2020	Plaintiffs' First Amended Initial Disclosures.
12/14/2020	CoreCivic's First Supplemental Response to Plaintiffs' First Request for Production of Documents.
10/20/2021	Joint Motion to Extend Fact Discovery and Expert Disclosure Deadlines.

Deposition testimony

Droured Blackmon	CoreCivic, Chief of Unit Management, 10/14/2021.
Bethany Leanne Brazier	Mercer University, Associate Director of Finance and Operations, 11/18/2021.
Harrell Gray	CoreCivic, Unit Manager Lieutenant, 10/27/2021.
Freddie Hood	Department of Juvenile Justice, Correctional Officer, 10/22/2021.

Susan Huffman	Trinity Services Group, Regional Vice President 7/15/2021.
Terrence Lane	CoreCivic, Assistant Chief of Security, 10/5/2021.
Matthew Moye	Stewart County, Manager, 10/21/2021.
Jacqueline Norman	CoreCivic, Assistant Warden, 11/15/2021.
Charlie Peterson	Ace Hardware Corporation, Warehouse Supervisor, 10/18/2021.
Troy P. Pollock	CoreCivic, Retired/Part-time employee/Formal Assistant Warden, 9/30/2021.
Michael Swinton	CoreCivic, Vice President & Chief Operations Officer, 11/2/2021.
Russell Washburn	CoreCivic, Warden, 12/1/2021.
Russell Washburn	CoreCivic, Warden, 12/2/2021.

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CTRL0000027-032	TRINITY-00020495
CTRL0000050-098	TRINITY-00020546
ICE-BARRIENTOS-0001-081	TRINITY-00020588
ICE-BARRIENTOS-0128-141	TRINITY-00020640
ICE-BARRIENTOS-0160-164	TRINITY-00020682
ICE-BARRIENTOS-0174-253	TRINITY-00020741
ICE-BARRIENTOS-0256-275	TRINITY-00020794
ICE-BARRIENTOS-0024518-538	TRINITY-00020834
SCGA0000004-06	TRINITY-00020891
SCGA0000009-020	TRINITY-00020931
SECURUS_000094-0156	TRINITY-00020982
TRINITY00000032-0229	TRINITY-00021042
TRINITY00000267-0378	TRINITY-00021101

TRINITY-00021155	TRINITY-00022715
TRINITY-00021207	TRINITY-00022767
TRINITY-00021266	TRINITY-00022829
TRINITY-00021326	TRINITY-00022887
TRINITY-00021377	TRINITY-00022947
TRINITY-00021430	TRINITY-00022996
TRINITY-00021490	TRINITY-00023058
TRINITY-00021542	TRINITY-00023114
TRINITY-00021600	TRINITY-00023174
TRINITY-00021661	TRINITY-00023235
TRINITY-00021720	TRINITY-00023296
TRINITY-00021777	TRINITY-00023345
TRINITY-00021835	TRINITY-00023401
TRINITY-00021895	TRINITY-00023458
TRINITY-00021947	TRINITY-00023519
TRINITY-00022012	TRINITY-00023580
TRINITY-00022071	TRINITY-00023627
TRINITY-00022130	TRINITY-00023687
TRINITY-00022190	TRINITY-00023742
TRINITY-00022240	TRINITY-00023802
TRINITY-00022299	TRINITY-00023865
TRINITY-00022350	TRINITY-00023913
TRINITY-00022414	TRINITY-00023970
TRINITY-00022474	TRINITY-00024031
TRINITY-00022534	TRINITY-00024093
TRINITY-00022592	TRINITY-00024153
TRINITY-00022654	TRINITY-00024210

TRINITY-00024271	TRINITY-00025995
TRINITY-00024334	TRINITY-00026059
TRINITY-00024383	TRINITY-00026106
TRINITY-00024440	TRINITY-00026167
TRINITY-00024503	TRINITY-00026231
TRINITY-00024553	TRINITY-00026278
TRINITY-00024615	TRINITY-00026338
TRINITY-00024669	TRINITY-00026398
TRINITY-00024731	TRINITY-00026463
TRINITY-00024796	TRINITY-00026527
TRINITY-00024851	TRINITY-00026575
TRINITY-00024914	TRINITY-00026635
TRINITY-00024965	TRINITY-00026695
TRINITY-00025082	TRINITY-00026757
TRINITY-00025141	TRINITY-00026802
TRINITY-00025203	TRINITY-00026867
TRINITY-00025254	TRINITY-00026925
TRINITY-00025315	TRINITY-00026971
TRINITY-00025372	TRINITY-00027034
TRINITY-00025435	TRINITY-00027096
TRINITY-00025495	TRINITY-00027154
TRINITY-00025557	TRINITY-00027200
TRINITY-00025592	TRINITY-00027267
TRINITY-00025655	TRINITY-00027327
TRINITY-00025717	TRINITY-00027374
TRINITY-00025770-77	TRINITY-00027441
TRINITY-00025934	TRINITY-00027501

TRINITY-00027550	TRINITY-00029217
TRINITY-00027611	TRINITY-00029276
TRINITY-00027676	TRINITY-00029336
TRINITY-00027721	TRINITY-00029396
TRINITY-00027782	TRINITY-00029454
TRINITY-00027842	TRINITY-00029511
TRINITY-00027905	TRINITY-00029566
TRINITY-00027965	TRINITY-00029621
TRINITY-00028026	TRINITY-00029676
TRINITY-00028090	TRINITY-00029729
TRINITY-00028150	TRINITY-00029784
TRINITY-00028215	TRINITY-00029840
TRINITY-00028277	TRINITY-00029898
TRINITY-00028336	TRINITY-00033645-47
TRINITY-00028401	TRINITY-00033947-952
TRINITY-00028463	TRINITY-00035334-35
TRINITY-00028533	TRINITY-00035722
TRINITY-00028599	TRINITY-00036589-590
TRINITY-00028663	TRINITY-00037594-95
TRINITY-00028729	TRINITY-00037717-18
TRINITY-00028790	TRINITY-00037720-27
TRINITY-00028857	TRINITY-00037762-67
TRINITY-00028915	TRINITY-00037772-73
TRINITY-00028975	TRINITY-00037775-77
TRINITY-00029036	TRINITY-00037871-73
TRINITY-00029097	TRINITY-00037917-920
TRINITY-00029156	TRINITY-00037922-28

TRINITY-00037979-982

TRINITY-00038572-73

TRINITY-00038109-110

TRINITY-00038581-82

TRINITY-00038112-13

TRINITY-00038584-85

TRINITY-00038277-78

TRINITY-00038587-88

TRINITY-00038285-88

TRINITY-00038629-630

TRINITY-00038292-93

TRINITY-00038632-33

TRINITY-00038410-12

TRINITY-00038635-36

TRINITY-00038414-15

TRINITY-00038671-74

TRINITY-00038471-72

TRINITY-00038708-09

TRINITY-00038485-88

Natively produced documents¹

VWP Participants – 2009.xlsx

VWP Participants – 2010.xlsx

VWP Participants – 2011.xlsx

VWP Participants – 2012.xlsx

VWP Participants – 2013.xlsx

VWP Participants – 2014.xlsx

VWP Participants – 2015.xlsx

VWP Participants – 2016.xlsx

VWP Participants – 2017.xlsx

VWP Participants - Dec. 2008.xlsx

VWP Participants - Jan.-Sept. 2018.xlsx

¹ I understand that these natively produced spreadsheets correspond to these Bates-stamped documents per instruction from counsel:

CoreCivic, VWP Pay Data, 11/2/2004-12/23/2020 (CCBVA0000006056-6059 and CCBVA0000106554).

Attachment A-3 Data Appendix

The following is an exhaustive list of steps performed in preparing the data for analysis, along with example entries to illustrate the step described. The *receipt num*, *deposit from*, *amount*, and *date* variables are included as produced in the raw data. The latter three variables are integral to the data preparation process. *Receipt num* is a unique identifier of each pay entry and is included such that each example entry can be identified within the raw data. The variables within the raw data that are not included for sample entries include:

- *Description*, which simply states “[REDACTED]” for nearly all entries included in the analysis. As such, this variable provides no additional information and is excluded from the examples below. Furthermore, this variable is not used in the data preparation process.
- *Agency num*, which is a unique identifier of the detained individual who received pay in a given pay entry. The identity of a detained individual has no influence on the data preparation or analytical process
- *Detainee name*, which is excluded from the sample entries for the same reason that *agency num* is excluded.

Assigned shift count, shaded in blue in the examples below, is the variable created through the data preparation process. This variable indicates the number of shifts assigned to a given entry through the data preparation process. Green text highlighting is used to emphasize aspects of the data used to assign shift counts.

The first data preparation step involved identifying entries corresponding to a single workday, and thus a single shift.¹ To be assigned a single shift in the *Assigned shift count* variable, a pay entry must (1) be associated with a single, extractable date in the *deposit from* variable and (2) contain a payment amount of \$1, \$2, \$3, or \$4, the payment amounts understood to correspond to a single shift’s payment.² To satisfy the first criterion, a single, clean payment date from the *deposit from* memo is extracted, if applicable and easily obtained. Accuracy of the extracted date is verified by ensuring that it was within a month of the provided *date* variable. The second criterion is satisfied by examining the *amount* variable for a payment value of \$1, \$2,

¹ Note that further data preparation steps also identify entries that correspond to a single shift through other methods.

² See, for example:

[REDACTED] (CCBVA0000004011–CCBVA0000004100, at CCBVA0000004071).

Detainee Orientation Handbook Stewart Detention Center, 4/2014 (CCBVA0000000029–68, at CCBVA0000000042).

\$3, or \$4. This approach is conservative, because it does not account for situations in which a detainee worked multiple shifts on one date with total payment amount of \$4 and under.

Next, all entries paid at \$1 are assumed to correspond to a single shift, irrespective of the *deposit from* memo. Per the ICE Performance Based National Detention Standards, \$1 is the minimum amount paid to a VWP worker for a single shift's work.³

All entries containing the words "1st shift," "2nd shift," "3rd shift," or "night shift," in the *deposit from* variable are assumed to correspond to a single shift due to the singular grammatical number. Variations on the above list are considered, as well. Language associating "1st shift," "2nd shift," and "3rd shift" with a single shift is observed in some CoreCivic produced documents describing the VWP.⁴ Further, this approach is conservative, as it does not account for the possibility that such memos could pertain to multiple workdays of shifts, and, as such, could undercount the true number of shifts associated with such entries.

Review of pay data reveals that ampersands ("&") are used to separate distinct workdays within the *deposit from* variable.⁵ The number of ampersands can generally indicate the number of days, contingent on different payment amounts. That is, a single ampersand for pay entries with payment amounts of \$2 connects two days, with each day being paid \$1; one or two ampersands for pay entries with payment amounts of \$3 connect three days, with each day being paid \$1;

³ U.S. Immigration and Customs Enforcement, "Performance-Based National Detention Standards 2011," revised 12/2016, at 407, available at: <https://www.ice.gov/doclib/detentionstandards/2011/pbnds2011r2016.pdf>.

⁴ CoreCivic, Stewart Detention Center 24 Hour Routine for General Population, 3/6/2019 (CCBVA0000004652-53).

⁵ For entries with ampersands, the *deposit from* memo is interpreted as indicating the detained individual received payment for shifts worked on multiple days, shown between the appropriate month and year (e.g., a date format of "Month – Day 1 & Day 2 – Year"). For example, [REDACTED] Sample pay entries included in this step and in subsequent data preparation steps include *deposit from* memos that follow a similar format.

and one or two ampersands for pay entries with payment amounts of \$4 usually connect two days, with each day being paid \$2, except in special cases.

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

Similarly, review of pay data reveals that an asterisk (“*”) can be used to separate two distinct days within the *deposit from* memo for pay entries with payment amounts of \$2 and some pay entries with payment amounts of \$3 and \$4. Under these circumstances, a pay entry is assumed to correspond to two shifts, with daily pay rates of either \$1 or \$2. Along similar lines, pay entries with two asterisks in the *deposit from* memo appear to separate three distinct days for pay entries. Entries with two asterisks and payment amounts of \$3 are assumed to correspond to three days of work, with a daily pay rate of \$1. Entries with three asterisks in the *deposit from* memo appear to separate four distinct workdays for pay entries with payment amounts of \$4, which would correspond, again, to a daily pay rate of \$1. Shift counts are assigned according to the distinct number of days identified in the *deposit from* memo.

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

Some *deposit from* memos reference specific date ranges, such as “Mon-Wed,” “Sat-Tues,” and “Thurs-Friday.” Pay entries with such memos are assumed to correspond to work performed on each day included within the range, with shift count assigned accordingly. For example, a pay entry with a “Mon-Wed” memo is assumed to correspond to three workdays, and, thus, three shifts.

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

Some pay entries contain a *deposit from* memo of “1.” These memos are assumed to refer to a single shift, so entries with such memos are assigned one shift accordingly.

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

Some pay entries contain *deposit from* memos consisting of a single date in various formats and are assumed to correspond to a single workday, and thus, a single shift, according to the assumption that VWP workers performed one shift per day of work.

Some pay entries include multiple distinct dates within the *deposit from* memo, separated from one another by containing each date in parentheses. As such, the number of pairs of parentheses appears to correspond to the number of days worked. For example, a pay entry with four pairs of parentheses corresponds to four distinct days, and thus is assigned four shifts.

Similarly, some pay entries separate distinct dates worked via commas. Counting distinct days worked via the number of commas is particularly reliable with higher numbers of commas, as there is a lot of noise in entries with few commas. For example,

Thus, for these types of entries, the number of workdays is determined to be the number of commas plus one, with one shift worked each of those workdays. For example,

Some entries have input dates in the *deposit from* memo that appear to have errors. For example, there are occasionally issues where the date extracted from the *deposit from* memo is at least a year separate from the *date* variable. Other issues of this nature include extracted years with an extra digit (e.g., 20145) or extracted years missing a digit (e.g., 202). When the payment amounts for such entries are low (i.e., \$2 or \$3, amounts that we understand can be paid for a single day worked), the entries are assumed to correspond to a single workday, and, accordingly, a single shift. In other words, it is assumed that such entries correspond with just one day's worth of work.

Category	Item	Value	Unit	Notes
A	Item 1	100	kg	
	Item 2	200	kg	
	Item 3	300	kg	

Manual review of the data indicates small, systematic patterns for pay entries corresponding to a single shift. These patterns include payment amount of \$2 with a memo containing the word “unit;” payment amount of \$2 with a memo containing either two hyphens or two slashes; payment amount of \$2–\$4 with a memo containing no numeric digits; or payment amount of \$3 with a memo containing a single comma. This approach is conservative in assuming that entries with poorly entered or no date information correspond to just one day’s worth of work. For example, [REDACTED] [REDACTED] [REDACTED]

Category	Item	Value	Unit	Notes
A	1	100	kg	
	2	200	kg	
	3	300	kg	
	4	400	kg	
	5	500	kg	
	6	600	kg	
	7	700	kg	
	8	800	kg	
	9	900	kg	
	10	1000	kg	
	11	1100	kg	
	12	1200	kg	

Similarly, manual review of the data indicates systematic patterns for pay entries corresponding to two shifts. These patterns include payment amount of \$2, \$4, \$6, or \$8 with a memo containing a single comma, the word “unit,” and either zero or multiple hyphens (indicating two separate days worked at an even wage rate); payment amount of \$2 with a memo containing two hyphens and a slash; payment amount of \$6 and a payment memo containing at least one hyphen and no commas or slashes; payment amount of \$4 or \$6 and at least one asterisk; and payment amounts of \$4 and a payment memo containing a single comma. The unifying trend among such entries is that the *deposit from* memo appears to reference two distinct workdays. Amounts of \$2, \$4, \$6, and \$8 are referenced because they are the doubles of the amounts typically paid for one workday (\$1, \$2, \$3, or \$4).

Along similar lines, manual review of the data indicates systematic patterns for pay entries corresponding to three shifts. These patterns include *deposit from* memos indicating three distinct days of pay for payments of \$6 or \$9; payment amount of \$3 and a memo containing two forward slashes and one hyphen; payment amount of \$3 and memos containing two forward slashes and at least one asterisk; and payment amount of \$3 with memos containing two commas. The unifying trend among such entries is that the *deposit from* memo appears to reference three distinct workdays; in cases where entries of \$6 or \$9 are examined, these indicate the triples of amounts typically paid for one workday (\$2 or \$3).

Lastly, manual review of the data indicates systematic patterns for pay entries corresponding to four shifts. These patterns include *deposit from* memos indicating four distinct days of pay; payment amount of \$8 with a memo containing a single asterisk; or payment amount of \$4 with a memo containing three or four commas. The unifying trend among such entries is that the *deposit from* memo appears to reference four distinct workdays; in cases where entries of \$8 are examined, this indicates the quadruple of a typical amount paid for one workday, \$2.

Approximately 6% of entries cannot be used in the analyses, even after the foregoing cleaning steps. Below are examples of records that would require significant effort and/or assumptions

in order to be processed for use in the analysis. Reasons that these are considered “non-cleanable” include one of or a combination of the following: (1) incomplete or unclear information in the *deposit from* variable (e.g., records 1, 5–7, 11–12) ; (2) empty *deposit from* variable (e.g., records 2–4); (3) payment amounts that differ vastly from expected payments without any sense of the number of days or shifts worked (e.g., records 9–10); and/or (4) special case records requiring individualized manual review (e.g., record 8).

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Attachment B-1

Class Definitions and Associated Damages Start Dates

Class	Definition [A]	Start Date [B]
Forced Labor class	"All civil immigration detainees who performed work for CoreCivic at Stewart in the "Volunteer Work Program" starting ten years prior to the date the original complaint was filed (April 17, 2018) until the date of final judgment in this matter[.]"	4/17/2008
Unjust Enrichment class	"All civil immigration detainees who performed work for CoreCivic at Stewart in the "Volunteer Work Program" starting four years prior to the date the original complaint was filed (April 17, 2018) until the date of final judgment in this matter[.]"	4/17/2014
Excluded from class definitions	"Excluded from the class definitions are the defendants, their officers, directors, management, employees, subsidiaries, and affiliates, and all federal governmental entities."	n/a

Notes and sources:

Note that estimated damages for the classes are not additive.

[A] Amended Complaint, 10/16/2020, at 26–27.

[B] Amended Complaint, 10/16/2020, at 26–27.

Attachment B-2

Data Summary by Class

Metric	Source	Forced Labor Class	Unjust Enrichment Class
Data start date	[A]	12/23/2008	4/17/2014
Data end date	[B]	12/23/2020	12/23/2020
Unique individuals	[C]	32,103	13,719
Analyzable data entries	[D]	889,053	531,631
Analyzable data entries per individual	[E]	27.69	38.75
Total shifts	[F]	922,034	544,030
Shifts per individual	[G]	28.72	39.66
Total hours worked	[H]	5,532,204	3,264,180
Hours worked per individual	[I]	172.33	237.93
Total paid wages	[J]	\$ 2,289,524	\$ 1,442,513
Average paid wages per individual	[K]	\$ 71.32	\$ 105.15
Estimated paid hourly wage	[L]	\$ 0.41	\$ 0.44

Notes and sources:

Note that estimated damages for the classes are not additive.

Note that the Forced Labor class is coextensive with the entirety of the analyzable pay data.

[A]–[B] Attachment B-1, at B and Attachment H-4.

[C] Attachment H-4.

[D] Attachment C-1, at Analyzable data entries.

[E] = [D] / [C].

[F] Attachment D-3, at Total shifts.

[G] = [F] / [C].

[H] Attachment D-3, at Total hours worked.

[I] = [H] / [C].

[J] Attachment D-4, at Total paid wages.

[K] = [J] / [C].

[L] Attachment D-4, at Estimated paid hourly wage.

Attachment C-1

Data Entry Preparation in CoreCivic's VWP Pay Data

Entries	Forced Labor Class		Unjust Enrichment Class	
	Count	Percentage	Count	Percentage
	[A]	[B]	[C]	[D]
Analyzable data entries	889,053	94.1%	531,631	93.9%
Unanalyzable data entries	56,055	5.9%	34,276	6.1%
Total data entries	945,108	100.0%	565,907	100.0%

Notes and sources:

The ability for a data entry to be processed or prepared in this context means that the necessary information required to analyze the data for damages estimation can be parsed from the variables available. In the attachments and in my report, I refer to processed records as "analyzable" and to records that could not be adequately processed as "unanalyzable."

For detailed discussion of the produced data and required data preparation, see Section 5 of my report and Attachment A-3.

The damages period for the Forced Labor class begins ten years prior to the complaint filed April 17, 2018. See:

Attachment B-1, at [B] for 'Forced Labor class.'

The damages period for the Unjust Enrichment class begins four years prior to the complaint filed April 17, 2018. See:

Attachment B-1, at [B] for 'Unjust Enrichment class.'

See Section 5 of my report for a discussion of my analysis of the CoreCivic VWP data.

[A] Attachment H-4.

[B] = [A] / [A] at 'Total data entries'.

[C] Attachment H-4.

[D] = [C] / [C] at 'Total data entries'.

Attachment C-2

Entries in CoreCivic's VWP Pay Data by Year, Forced Labor Class

Year	Analyzable Entries		Unanalyzable Entries	
	Count	Percentage	Count	Percentage
2008	2,102	97.1%	63	2.9%
2009	85,696	97.2%	2,439	2.8%
2010	71,188	94.5%	4,159	5.5%
2011	60,654	92.3%	5,079	7.7%
2012	55,936	91.7%	5,069	8.3%
2013	62,566	93.0%	4,723	7.0%
2014	75,041	99.1%	705	0.9%
2015	80,949	99.0%	784	1.0%
2016	79,194	98.6%	1,088	1.4%
2017	86,259	97.3%	2,386	2.7%
2018	73,079	88.3%	9,654	11.7%
2019	87,080	87.4%	12,583	12.6%
2020	69,309	90.4%	7,323	9.6%
Total	889,053	94.1%	56,055	5.9%

Notes and sources:

(CCBVA0000006056-CCBVA0000006059, CCBVA0000106554, and CCBVA0000150718).

See Attachment H-4.

See Section 5 of my report for a discussion of my analysis of the CoreCivic VWP data.

The damages period for the Forced Labor class begins ten years prior to the complaint filed April 17, 2018.

The damages period for the Unjust Enrichment class begins four years prior to the complaint filed April 17, 2018.

Attachment C-3

Entries in CoreCivic's VWP Pay Data by Year, Unjust Enrichment Class

Year	Analyzable Entries		Unanalyzable Entries	
	Count	Percentage	Count	Percentage
2014	55,761	99.2%	458	0.8%
2015	80,949	99.0%	784	1.0%
2016	79,194	98.6%	1,088	1.4%
2017	86,259	97.3%	2,386	2.7%
2018	73,079	88.3%	9,654	11.7%
2019	87,080	87.4%	12,583	12.6%
2020	69,309	90.4%	7,323	9.6%
Total	531,631	93.9%	34,276	6.1%

Notes and sources:

(CCBVA0000006056-CCBVA0000006059, CCBVA0000106554, and CCBVA0000150718).

See Attachment H-4.

See Section 5 of my report for a discussion of my analysis of the CoreCivic VWP data.

The damages period for the Forced Labor class begins ten years prior to the complaint filed April 17, 2018.

The damages period for the Unjust Enrichment class begins four years prior to the complaint filed April 17, 2018.

Attachment D-1

Overview of Shifts in Analyzable Entries of VWP Pay Data, Pre-Federal Minimum Wage Increase

Number of Shifts in Pay Entry	Forced Labor Class		Unjust Enrichment Class	
	Entries	Percentage	Entries	Percentage
	[A]	[B]	[C]	[D]
1	48,112	99.1%	-	n/a
2	377	0.8%	-	n/a
3	15	0.0%	-	n/a
4	21	0.0%	-	n/a
5	-	0.0%	-	n/a
6	-	0.0%	-	n/a
7	-	0.0%	-	n/a
8	-	0.0%	-	n/a
9	-	0.0%	-	n/a
10	-	0.0%	-	n/a
11	-	0.0%	-	n/a
12	-	0.0%	-	n/a
13	-	0.0%	-	n/a
14	-	0.0%	-	n/a
15	-	0.0%	-	n/a
16	-	0.0%	-	n/a
17	-	0.0%	-	n/a
18	-	0.0%	-	n/a
19	-	0.0%	-	n/a
Total shifts	48,995	n/a	-	n/a
Total data entries	48,525	100.0%	-	n/a

Notes and sources:

See Section 5 of my report for a discussion of my analysis of the CoreCivic VWP data.

The Department of Labor raised the Federal Minimum Wage from \$6.55 to \$7.25 effective July 24, 2009. The previous wage increase to \$6.55 from \$5.85 occurred

July 24, 2008. Data for this analysis span from December 23, 2008 to December 23, 2020. Damages for the Unjust Enrichment class begin to accrue in 2014,

hence there are no pay entries for the Unjust Enrichment class prior to the Federal Minimum Wage increase relevant to this matter. See:

U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021).

[A] See Attachment H-4.

[B] = [A] / [A] at 'Total data entries'.

[C] See Attachment H-4.

[D] = [C] / [C] at 'Total data entries'.

Attachment D-2

Overview of Shifts in Analyzable Entries of VWP Pay Data, Post-Federal Minimum Wage Increase

Number of Shifts in Pay Entry	Forced Labor Class		Unjust Enrichment Class	
	Entries	Percentage	Entries	Percentage
	[A]	[B]	[C]	[D]
1	820,237	97.6%	523,419	98.5%
2	12,216	1.5%	6,036	1.1%
3	4,137	0.5%	372	0.1%
4	3,919	0.5%	1,785	0.3%
5	-	0.0%	-	0.0%
6	-	0.0%	-	0.0%
7	-	0.0%	-	0.0%
8	-	0.0%	-	0.0%
9	-	0.0%	-	0.0%
10	-	0.0%	-	0.0%
11	-	0.0%	-	0.0%
12	-	0.0%	-	0.0%
13	5	0.0%	5	0.0%
14	5	0.0%	5	0.0%
15	4	0.0%	4	0.0%
16	1	0.0%	1	0.0%
17	1	0.0%	1	0.0%
18	2	0.0%	2	0.0%
19	1	0.0%	1	0.0%
Total shifts	873,039	n/a	544,030	n/a
Total data entries	840,528	100.0%	531,631	n/a

Notes and sources:

See Section 5 of my report for a discussion of my analysis of the CoreCivic VWP data.

The Department of Labor raised the Federal Minimum Wage from \$6.55 to \$7.25 effective July 24, 2009. The previous wage increase to \$6.55 from \$5.85 occurred

July 24, 2008. Data for this analysis span from December 23, 2008 to December 23, 2020. Damages for the Unjust Enrichment class begin to accrue in 2014,

hence there are no pay entries for the Unjust Enrichment class prior to the Federal Minimum Wage increase relevant to this matter. See:

U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021).

[A] See Attachment H-4.

[B] = [A] / [A] at 'Total data entries'.

[C] See Attachment H-4.

[D] = [C] / [C] at 'Total data entries'.

Attachment D-3

Hours Worked in CoreCivic's VWP Pay Data

Metric	Source	Pre-Federal Minimum Wage Increase		Post-Federal Minimum Wage Increase		Total	
		Forced Labor Class	Unjust Enrichment Class	Forced Labor Class	Unjust Enrichment Class	Forced Labor Class	Unjust Enrichment Class
Total shifts	[A]	48,995	-	873,039	544,030	922,034	544,030
Hours per shift	[B]	6	6	6	6	6	6
Total hours worked	[C]	293,970	-	5,238,234	3,264,180	5,532,204	3,264,180

Notes and sources:

The Department of Labor raised the Federal Minimum Wage from \$6.55 to \$7.25 effective July 24, 2009. The previous wage increase to \$6.55 from \$5.85 occurred July 24, 2008. Data for this analysis span from December 23, 2008 to December 23, 2020. Damages for the Unjust Enrichment class begin to accrue in 2014, hence there are no pay entries for the Unjust Enrichment class prior to the Federal Minimum Wage increase relevant to this matter. See: U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021).

[A] Pre-Federal Minimum Wage Increase: Attachment D-1, at 'Total shifts' for [A] and [C].

Post-Federal Minimum Wage Increase: Attachment D-2, at 'Total shifts' for [A] and [C].

[B] See Section 5 of my report for a discussion of assumptions used in my analysis.

[C] = [A] × [B].

Attachment D-4

Estimated Paid Hourly Wage of VWP Participants

Metric	Source	Pre-Federal Minimum Wage Increase		Post-Federal Minimum Wage Increase		Total	
		Forced Labor Class	Unjust Enrichment Class	Forced Labor Class	Unjust Enrichment Class	Forced Labor Class	Unjust Enrichment Class
Total paid wages	[A]	\$ 127,166	\$ -	\$ 2,162,358	\$ 1,442,513	\$ 2,289,524	\$ 1,442,513
Total hours worked	[B]	293,970	-	5,238,234	3,264,180	5,532,204	3,264,180
Estimated paid hourly wage	[C]	\$ 0.43	n/a	\$ 0.41	\$ 0.44	\$ 0.41	\$ 0.44

Notes and sources:

The Department of Labor raised the Federal Minimum Wage from \$6.55 to \$7.25 effective July 24, 2009. The previous wage increase to \$6.55 from \$5.85 occurred July 24, 2008. Data for this analysis span from December 23, 2008 to December 23, 2020. Damages for the Unjust Enrichment class begin to accrue in 2014, hence there are no pay entries for the Unjust Enrichment class prior to the Federal Minimum Wage increase relevant to this matter. See: U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021).

[A] See Attachment H-4.

For detailed discussion of my analysis of the CoreCivic VWP data, see Section 5 of my report.

[B] Attachment D-3, at [C].

[C] = [A] / [B].

Attachment D-5

Estimated Effective Federal Minimum Wage Rate

Metric	Pre-Federal Minimum Wage Increase		Post-Federal Minimum Wage Increase		Total	
	Total Hours [A]	Minimum Wage [B]	Total Hours [C]	Minimum Wage [D]	Total Hours [E]	Effective Minimum Wage [F]
Forced labor class	293,970	\$ 6.55	5,238,234	\$ 7.25	5,532,204	\$ 7.21
Unjust enrichment class	-	\$ 6.55	3,264,180	\$ 7.25	3,264,180	\$ 7.25

Notes and sources:

The Department of Labor raised the Federal Minimum Wage from \$6.55 to \$7.25 effective July 24, 2009. The previous wage increase to \$6.55 from \$5.85 occurred July 24, 2008. Data for this analysis span from December 23, 2008 to December 23, 2020. Damages for the Unjust Enrichment class begin to accrue in 2014, hence there are no pay entries for the Unjust Enrichment class prior to the Federal Minimum Wage increase relevant to this matter. See: U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021).

[A] Attachment D-3, at [C].

[B] U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021).

[C] Attachment D-3, at [C].

[D] U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021).

[E] = [A] + [C].

[F] Equal to the weighted average of the minimum wage values, weighted by total hours in each time period.

Attachment D-6

Value of VWP Labor in Wages Using Effective Federal Minimum Wage

Metric	Source	Forced Labor Class	Unjust Enrichment Class
Total hours worked	[A]	5,532,204	3,264,180
Effective federal minimum wage	[B]	\$ 7.21	\$ 7.25
Estimated paid hourly wage	[C]	\$ 0.41	\$ 0.44
Total value of labor in wages	[D]	\$ 37,613,176	\$ 22,222,792

Notes and sources:

Note that estimated damages for the classes are not additive.

[A] Attachment D-5, at [E].

[B] Attachment D-5, at [F].

[C] Attachment D-4, at [C].

[D] = [A] × ([B] - [C]).

Attachment E-1

Comparison Wage Time Periods

Comparison Wage Period	Source	Start Date	End Date	Wage Determination IGSA Modification Number
Comparison Wage Period 1	[A]	12/23/2008	7/23/2009	n/a
Comparison Wage Period 2	[B]	7/24/2009	11/19/2011	n/a
Comparison Wage Period 3	[C]	11/20/2011	9/21/2013	7
Comparison Wage Period 4	[D]	9/22/2013	9/21/2014	14
Comparison Wage Period 5	[E]	9/22/2014	3/1/2017	15
Comparison Wage Period 6	[F]	3/2/2017	7/31/2018	26
Comparison Wage Period 7	[G]	8/1/2018	7/31/2019	31
Comparison Wage Period 8	[H]	8/1/2019	7/31/2020	37
Comparison Wage Period 9	[I]	8/1/2020	12/23/2020	41

Notes and sources:

[A] Start Date: Earliest data date. See Attachment B-2, at [A] for Forced Labor Class.

End Date: Last day before Department of Labor increased the federal minimum wage. See:

U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021)

Wage Determination IGSA Modification Number: n/a.

[B] Start Date: Date of federal minimum wage rate increase by Department of Labor. See:

U.S. Department of Labor, History of Changes to the Minimum Wage Law, <https://www.dol.gov/agencies/whd/minimum-wage/history> (accessed 12/20/2021)

End Date: Day before IGSA Mod 7 wage determination effective date.

Wage Determination IGSA Modification Number: n/a.

[C] Start Date: IGSA Mod 7 wage determination effective date.

End Date: Day before IGSA Mod 14 wage determination effective date.

Wage Determination IGSA Modification Number: CoreCivic, Amendment of Solicitation/Modification of Contract, 11/16/2011 (CCBVA0000000357-360)

Note that IGSA Mod 8 specifies the "Start Date" reflected in the table above for [C]. CoreCivic, Amendment of Solicitation/Modification of Contract, 12/19/2011 (CCBVA0000000361).

[D] Start Date: IGSA Mod 14 wage determination effective date.

End Date: Day before IGSA Mod 15 wage determination effective date.

Wage Determination IGSA Modification Number: CoreCivic, Amendment of Solicitation/Modification of Contract, 6/19/2014 (CCBVA0000000392–396)

Note that IGSA Mod 16 specifies the "End Dates" reflected in the table above for [D] and [E]. CoreCivic, Amendment of Solicitation/Modification of Contract 9/4/2014 (CCBVA0000000402–404).

[E] Start Date: IGSA Mod 15 wage determination effective date.

End Date: Day before IGSA Mod 26 wage determination effective date.

Wage Determination IGSA Modification Number: CoreCivic, Amendment of Solicitation/Modification of Contract, 7/30/2014 (CCBVA0000000397–401)

Note that IGSA Mod 16 specifies the "End Dates" reflected in the table above for [D] and [E]. CoreCivic, Amendment of Solicitation/Modification of Contract 9/4/2014 (CCBVA0000000402–404).

[F] Start Date: IGSA Mod 26 wage determination effective date.

End Date: Day before IGSA Mod 31 wage determination effective date.

(CCBVA0000000931–944)

[G] Start Date: IGSA Mod 31 wage determination effective date.

End Date: Day before IGSA Mod 37 wage determination effective date.

Wage Determination IGSA Modification Number: CoreCivic, Amendment of Solicitation/Modification of Contract, 8/8/2018 (ICE-Barrientos 0128–141).

[H] Start Date: IGSA Mod 37 wage determination effective date.

End Date: Day before IGSA Mod 41 wage determination effective date.

(ICE-Barrientos 0229–250).

[I] Start Date: IGSA Mod 41 wage determination effective date.

End Date: Last date available in VWP pay data. See Attachment B-2, at [B].

(ICE-Barrientos 0262–275).

Attachment E-2

Distribution of Shifts by Jobs Performed in Analyzable Entries of VWP Pay Data by Comparison Wage Period, Forced Labor Class

Occupation	Comparison Wage Period 1		Comparison Wage Period 2		Comparison Wage Period 3	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	44,772	91.4%	111,282	62.8%	53,361	46.3%
Kitchen Worker	4,120	8.4%	54,805	30.9%	47,487	41.2%
Porter	6	0.0%	970	0.5%	1,312	1.1%
Shower Worker	2	0.0%	939	0.5%	2,346	2.0%
Laundry Worker	22	0.0%	1,318	0.7%	1,793	1.6%
Commissary Worker	48	0.1%	2,614	1.5%	2,432	2.1%
Janitor	21	0.0%	4,532	2.6%	5,912	5.1%
Barber	-	0.0%	89	0.1%	83	0.1%
Medical Worker	4	0.0%	646	0.4%	508	0.4%
Total	48,995	100.0%	177,195	100.0%	115,234	100.0%

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods.

'Shift Count': See Attachment H-4.

'Percentage' = 'Shift Count' / 'Total' Count for each period.

Occupation	Comparison Wage Period 4		Comparison Wage Period 5		Comparison Wage Period 6	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	24,120	34.1%	51,573	26.1%	43,824	39.0%
Kitchen Worker	25,644	36.3%	67,265	34.0%	34,905	31.1%
Porter	8,759	12.4%	38,836	19.6%	15,209	13.5%
Shower Worker	6,862	9.7%	25,511	12.9%	9,682	8.6%
Laundry Worker	1,394	2.0%	5,051	2.6%	3,584	3.2%
Commissary Worker	1,752	2.5%	4,322	2.2%	2,936	2.6%
Janitor	1,205	1.7%	1,864	0.9%	817	0.7%
Barber	548	0.8%	2,679	1.4%	1,288	1.1%
Medical Worker	387	0.5%	663	0.3%	62	0.1%
Total	70,671	100.0%	197,764	100.0%	112,307	100.0%

Occupation	Comparison Wage Period 7		Comparison Wage Period 8		Comparison Wage Period 9	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	37,785	43.5%	35,099	38.9%	3,236	14.2%
Kitchen Worker	28,579	32.9%	35,471	39.3%	11,276	49.6%
Porter	10,115	11.6%	10,357	11.5%	4,733	20.8%
Shower Worker	5,014	5.8%	4,736	5.3%	2,337	10.3%
Laundry Worker	2,561	2.9%	2,285	2.5%	744	3.3%
Commissary Worker	926	1.1%	582	0.6%	140	0.6%
Janitor	784	0.9%	79	0.1%	5	0.0%
Barber	987	1.1%	840	0.9%	199	0.9%
Medical Worker	206	0.2%	745	0.8%	47	0.2%
Total	86,957	100.0%	90,194	100.0%	22,717	100.0%

Occupation	Total	
	Shift Count	Percentage
No Job Identified	405,052	43.9%
Kitchen Worker	309,552	33.6%
Porter	90,297	9.8%
Shower Worker	57,429	6.2%
Laundry Worker	18,752	2.0%
Commissary Worker	15,752	1.7%
Janitor	15,219	1.7%
Barber	6,713	0.7%
Medical Worker	3,268	0.4%
Total	922,034	100.0%

Attachment E-3

Distribution of Shifts by Jobs Performed in Analyzable Entries of VWP Pay Data by Comparison Wage Period, Unjust Enrichment Class

Occupation	Comparison Wage Period 4		Comparison Wage Period 5		Comparison Wage Period 6	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	7,008	20.6%	51,573	26.1%	43,824	39.0%
Kitchen Worker	11,984	35.2%	67,265	34.0%	34,905	31.1%
Porter	6,820	20.0%	38,836	19.6%	15,209	13.5%
Shower Worker	5,572	16.3%	25,511	12.9%	9,682	8.6%
Laundry Worker	775	2.3%	5,051	2.6%	3,584	3.2%
Commissary Worker	817	2.4%	4,322	2.2%	2,936	2.6%
Janitor	487	1.4%	1,864	0.9%	817	0.7%
Barber	457	1.3%	2,679	1.4%	1,288	1.1%
Medical Worker	171	0.5%	663	0.3%	62	0.1%
Total	34,091	100.0%	197,764	100.0%	112,307	100.0%

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1) rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins.

'Shift Count': See Attachment H-4.

'Percentage' = 'Shift Count' / 'Total' Count for each period.

Occupation	Comparison Wage Period 7		Comparison Wage Period 8		Comparison Wage Period 9	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	37,785	43.5%	35,099	38.9%	3,236	14.2%
Kitchen Worker	28,579	32.9%	35,471	39.3%	11,276	49.6%
Porter	10,115	11.6%	10,357	11.5%	4,733	20.8%
Shower Worker	5,014	5.8%	4,736	5.3%	2,337	10.3%
Laundry Worker	2,561	2.9%	2,285	2.5%	744	3.3%
Commissary Worker	926	1.1%	582	0.6%	140	0.6%
Janitor	784	0.9%	79	0.1%	5	0.0%
Barber	987	1.1%	840	0.9%	199	0.9%
Medical Worker	206	0.2%	745	0.8%	47	0.2%
Total	86,957	100.0%	90,194	100.0%	22,717	100.0%

Occupation	Total	
	Shift Count	Percentage
No Job Identified	178,525	32.8%
Kitchen Worker	189,480	34.8%
Porter	86,070	15.8%
Shower Worker	52,852	9.7%
Laundry Worker	15,000	2.8%
Commissary Worker	9,723	1.8%
Janitor	4,036	0.7%
Barber	6,450	1.2%
Medical Worker	1,894	0.3%
Total	544,030	100.0%

Attachment E-4

Hours Worked in CoreCivic's VWP Pay Data by Comparison Wage Period, Forced Labor Class

Metric	Source	Comparison Wage Period 1	Comparison Wage Period 2	Comparison Wage Period 3	Comparison Wage Period 4	Comparison Wage Period 5
Total shifts	[A]	48,995	177,195	115,234	70,671	197,764
Hours per shift	[B]	6	6	6	6	6
Total hours worked	[C]	293,970	1,063,170	691,404	424,026	1,186,584

Notes and sources:

For definitions of Comparison Wage Periods, see Attachment E-1.

[A] Attachment E-2, at 'Total' for each respective Comparison Wage Period.

[B] See Section 5 of my report for a discussion of assumptions used in my analysis

[C] = [A] × [B].

Metric	Comparison Wage Period 6	Comparison Wage Period 7	Comparison Wage Period 8	Comparison Wage Period 9	Total
Total shifts	112,307	86,957	90,194	22,717	922,034
Hours per shift	6	6	6	6	6
Total hours worked	673,842	521,742	541,164	136,302	5,532,204

Attachment E-5

Hours Worked in CoreCivic's VWP Pay Data by Comparison Wage Period, Unjust Enrichment Class

Metric	Source	Comparison Wage Period 4	Comparison Wage Period 5	Comparison Wage Period 6	Comparison Wage Period 7	Comparison Wage Period 8
Total shifts	[A]	34,091	197,764	112,307	86,957	90,194
Hours per shift	[B]	6	6	6	6	6
Total hours worked	[C]	204,546	1,186,584	673,842	521,742	541,164

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1 rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins

[A] Attachment E-3, at 'Total' for each respective Comparison Wage Period.

[B] See Section 5 of my report for a discussion of assumptions used in my analysis

[C] = [A] × [B].

Metric	Comparison Wage Period 9	Total
Total shifts	22,717	544,030
Hours per shift	6	6
Total hours worked	136,302	3,264,180

Attachment E-6

Estimated Paid Hourly Wage of VWP Participants by Comparison Wage Period, Forced Labor Class

Metric	Source	Comparison Wage Period 1	Comparison Wage Period 2	Comparison Wage Period 3	Comparison Wage Period 4	Comparison Wage Period 5
Total paid wages	[A]	\$ 127,166	\$ 391,291	\$ 245,595	\$ 165,290	\$ 480,912
Total hours worked	[B]	293,970	1,063,170	691,404	424,026	1,186,584
Estimated paid hourly wage	[C]	\$ 0.43	\$ 0.37	\$ 0.36	\$ 0.39	\$ 0.41

Notes and sources:

For definitions of Comparison Wage Periods, see Attachment E-1.

[A] See Attachment H-4.

For detailed discussion of my analysis of the CoreCivic VWP data, see Section 5 of my report

[B] Attachment E-4, at [C].

[C] = [A] / [B].

Metric	Comparison Wage Period 6	Comparison Wage Period 7	Comparison Wage Period 8	Comparison Wage Period 9	Total
Total paid wages	\$ 278,177	\$ 253,282	\$ 275,431	\$ 72,380	\$ 2,289,524
Total hours worked	673,842	521,742	541,164	136,302	5,532,204
Estimated paid hourly wage	\$ 0.41	\$ 0.49	\$ 0.51	\$ 0.53	\$ 0.41

Attachment E-7

Estimated Paid Hourly Wage of VWP Participants by Comparison Wage Period, Unjust Enrichment Class

Metric	Source	Comparison Wage Period 4	Comparison Wage Period 5	Comparison Wage Period 6	Comparison Wage Period 7	Comparison Wage Period 8
Total paid wages	[A]	\$ 82,331	\$ 480,912	\$ 278,177	\$ 253,282	\$ 275,431
Total hours worked	[B]	204,546	1,186,584	673,842	521,742	541,164
Estimated paid hourly wage	[C]	\$ 0.40	\$ 0.41	\$ 0.41	\$ 0.49	\$ 0.51

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1 rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins

[A] See Attachment H-4.

For detailed discussion of my analysis of the CoreCivic VWP data, see Section 5 of my report

[B] Attachment E-5, at [C].

[C] = [A] / [B].

Metric	Comparison Wage Period 9	Total
Total paid wages	\$ 72,380	\$ 1,442,513
Total hours worked	136,302	3,264,180
Estimated paid hourly wage	\$ 0.53	\$ 0.44

Attachment E-8

Comparison Wages and Benefits for Jobs Performed at Stewart Detention Center by Comparison Wage Period

VWP Occupation	Comparison Wage Period	Comparison Job	Comparison Wage	Comparison Benefits	Universal Benefits	Comparison Total	Universal Total
	[A]	[B]	[C]	[D]	[E]	[F]	[G]
Kitchen worker	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
Kitchen worker	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
Kitchen worker	3	n/a	\$ 7.25	\$ -	\$ 3.59	\$ 7.25	\$ 10.84
Kitchen worker	4	n/a	\$ 7.25	\$ -	\$ 3.81	\$ 7.25	\$ 11.06
Kitchen worker	5	n/a	\$ 7.25	\$ -	\$ 3.81	\$ 7.25	\$ 11.06
Kitchen worker	6	n/a	\$ 7.25	\$ -	\$ 4.02	\$ 7.25	\$ 11.27
Kitchen worker	7	Food service worker	\$ 8.92	\$ 4.48	\$ 4.48	\$ 13.40	\$ 13.40
Kitchen worker	8	Food service worker	\$ 8.92	\$ 4.54	\$ 4.54	\$ 13.46	\$ 13.46
Kitchen worker	9	Food service worker	\$ 9.03	\$ 4.54	\$ 4.54	\$ 13.57	\$ 13.57
Porter	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
Porter	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
Porter	3	Janitor	\$ 9.25	\$ 3.59	\$ 3.59	\$ 12.84	\$ 12.84
Porter	4	Janitor	\$ 9.25	\$ 3.81	\$ 3.81	\$ 13.06	\$ 13.06
Porter	5	Janitor	\$ 9.25	\$ 3.81	\$ 3.81	\$ 13.06	\$ 13.06
Porter	6	Janitor	\$ 9.25	\$ 4.02	\$ 4.02	\$ 13.27	\$ 13.27
Porter	7	Janitor	\$ 9.41	\$ 4.48	\$ 4.48	\$ 13.89	\$ 13.89
Porter	8	Janitor	\$ 9.41	\$ 4.54	\$ 4.54	\$ 13.95	\$ 13.95
Porter	9	Janitor	\$ 9.60	\$ 4.54	\$ 4.54	\$ 14.14	\$ 14.14
Shower worker	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
Shower worker	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
Shower worker	3	Janitor	\$ 9.25	\$ 3.59	\$ 3.59	\$ 12.84	\$ 12.84
Shower worker	4	Janitor	\$ 9.25	\$ 3.81	\$ 3.81	\$ 13.06	\$ 13.06
Shower worker	5	Janitor	\$ 9.25	\$ 3.81	\$ 3.81	\$ 13.06	\$ 13.06
Shower worker	6	Janitor	\$ 9.25	\$ 4.02	\$ 4.02	\$ 13.27	\$ 13.27
Shower worker	7	Janitor	\$ 9.41	\$ 4.48	\$ 4.48	\$ 13.89	\$ 13.89
Shower worker	8	Janitor	\$ 9.41	\$ 4.54	\$ 4.54	\$ 13.95	\$ 13.95
Shower worker	9	Janitor	\$ 9.60	\$ 4.54	\$ 4.54	\$ 14.14	\$ 14.14

VWP Occupation	Comparison Wage Period	Comparison Job	Comparison Wage	Comparison Benefits	Universal Benefits	Comparison Total	Universal Total
	[A]	[B]	[C]	[D]	[E]	[F]	[G]
Laundry worker	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
Laundry worker	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
Laundry worker	3	n/a	\$ 7.25	\$ -	\$ 3.59	\$ 7.25	\$ 10.84
Laundry worker	4	n/a	\$ 7.25	\$ -	\$ 3.81	\$ 7.25	\$ 11.06
Laundry worker	5	n/a	\$ 7.25	\$ -	\$ 3.81	\$ 7.25	\$ 11.06
Laundry worker	6	n/a	\$ 7.25	\$ -	\$ 4.02	\$ 7.25	\$ 11.27
Laundry worker	7	Washer, Machine	\$ 9.39	\$ 4.48	\$ 4.48	\$ 13.87	\$ 13.87
Laundry worker	8	Washer, Machine	\$ 9.59	\$ 4.54	\$ 4.54	\$ 14.13	\$ 14.13
Laundry worker	9	Washer, Machine	\$ 9.78	\$ 4.54	\$ 4.54	\$ 14.32	\$ 14.32
Commissary worker	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
Commissary worker	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
Commissary worker	3	General Clerk I	\$ 10.64	\$ 3.59	\$ 3.59	\$ 14.23	\$ 14.23
Commissary worker	4	General Clerk I	\$ 10.64	\$ 3.81	\$ 3.81	\$ 14.45	\$ 14.45
Commissary worker	5	General Clerk I	\$ 10.66	\$ 3.81	\$ 3.81	\$ 14.47	\$ 14.47
Commissary worker	6	General Clerk I	\$ 10.66	\$ 4.02	\$ 4.02	\$ 14.68	\$ 14.68
Commissary worker	7	General Clerk I	\$ 11.78	\$ 4.48	\$ 4.48	\$ 16.26	\$ 16.26
Commissary worker	8	General Clerk I	\$ 11.78	\$ 4.54	\$ 4.54	\$ 16.32	\$ 16.32
Commissary worker	9	General Clerk I	\$ 12.41	\$ 4.54	\$ 4.54	\$ 16.95	\$ 16.95
Janitor	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
Janitor	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
Janitor	3	Janitor	\$ 9.25	\$ 3.59	\$ 3.59	\$ 12.84	\$ 12.84
Janitor	4	Janitor	\$ 9.25	\$ 3.81	\$ 3.81	\$ 13.06	\$ 13.06
Janitor	5	Janitor	\$ 9.25	\$ 3.81	\$ 3.81	\$ 13.06	\$ 13.06
Janitor	6	Janitor	\$ 9.25	\$ 4.02	\$ 4.02	\$ 13.27	\$ 13.27
Janitor	7	Janitor	\$ 9.41	\$ 4.48	\$ 4.48	\$ 13.89	\$ 13.89
Janitor	8	Janitor	\$ 9.41	\$ 4.54	\$ 4.54	\$ 13.95	\$ 13.95
Janitor	9	Janitor	\$ 9.60	\$ 4.54	\$ 4.54	\$ 14.14	\$ 14.14
Medical worker	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
Medical worker	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
Medical worker	3	Janitor	\$ 9.25	\$ 3.59	\$ 3.59	\$ 12.84	\$ 12.84

VWP Occupation	Comparison Wage Period	Comparison Job	Comparison Wage	Comparison Benefits	Universal Benefits	Comparison Total	Universal Total
	[A]	[B]	[C]	[D]	[E]	[F]	[G]
Medical worker	4	Janitor	\$ 9.25	\$ 3.81	\$ 3.81	\$ 13.06	\$ 13.06
Medical worker	5	Janitor	\$ 9.25	\$ 3.81	\$ 3.81	\$ 13.06	\$ 13.06
Medical worker	6	Janitor	\$ 9.25	\$ 4.02	\$ 4.02	\$ 13.27	\$ 13.27
Medical worker	7	Janitor	\$ 9.41	\$ 4.48	\$ 4.48	\$ 13.89	\$ 13.89
Medical worker	8	Janitor	\$ 9.41	\$ 4.54	\$ 4.54	\$ 13.95	\$ 13.95
Medical worker	9	Janitor	\$ 9.60	\$ 4.54	\$ 4.54	\$ 14.14	\$ 14.14
Barber	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
Barber	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
Barber	3	n/a	\$ 7.25	\$ -	\$ 3.59	\$ 7.25	\$ 10.84
Barber	4	n/a	\$ 7.25	\$ -	\$ 3.81	\$ 7.25	\$ 11.06
Barber	5	n/a	\$ 7.25	\$ -	\$ 3.81	\$ 7.25	\$ 11.06
Barber	6	n/a	\$ 7.25	\$ -	\$ 4.02	\$ 7.25	\$ 11.27
Barber	7	n/a	\$ 7.25	\$ -	\$ 4.48	\$ 7.25	\$ 11.73
Barber	8	n/a	\$ 7.25	\$ -	\$ 4.54	\$ 7.25	\$ 11.79
Barber	9	n/a	\$ 7.25	\$ -	\$ 4.54	\$ 7.25	\$ 11.79
No job identified	1	n/a	\$ 6.55	\$ -	\$ -	\$ 6.55	\$ 6.55
No job identified	2	n/a	\$ 7.25	\$ -	\$ -	\$ 7.25	\$ 7.25
No job identified	3	n/a	\$ 7.25	\$ -	\$ 3.59	\$ 7.25	\$ 10.84
No job identified	4	n/a	\$ 7.25	\$ -	\$ 3.81	\$ 7.25	\$ 11.06
No job identified	5	n/a	\$ 7.25	\$ -	\$ 3.81	\$ 7.25	\$ 11.06
No job identified	6	n/a	\$ 7.25	\$ -	\$ 4.02	\$ 7.25	\$ 11.27
No job identified	7	n/a	\$ 7.25	\$ -	\$ 4.48	\$ 7.25	\$ 11.73
No job identified	8	n/a	\$ 7.25	\$ -	\$ 4.54	\$ 7.25	\$ 11.79
No job identified	9	n/a	\$ 7.25	\$ -	\$ 4.54	\$ 7.25	\$ 11.79

Notes and sources:

[A] See Attachment E-1 for definitions of Comparison Wage Periods.

[B] See Section 5.3.2 of my report for discussion of comparison jobs. Comparison jobs are only paired in those time periods that have the comparison job listed in the associated IGSA amendment.

For relevant amendments for each period, see Attachment E-1.

[C] Comparison wages are from the relevant IGSA amendment wage determinations for the applicable comparison job, if available. For the relevant amendments for each time period, see Attachment E-1.

[D] Comparison benefits are from the relevant IGSA amendment benefits discussions. Note that for 'Comparison Benefits', benefits are only applied to those positions listed in the relevant IGSA amendment wage determination. For discussion of the distinction between 'Comparison Benefits' and 'Universal Benefits', see Section 5.3.3 of my report.

[E] Benefits, if defined in the relevant IGSA amendment wage determination, are applied to all pay entries in that time period for 'Universal Benefits' irrespective of VWP job.

VWP Occupation	Comparison Wage Period	Comparison Job	Comparison Wage	Comparison Benefits	Universal Benefits	Comparison Total	Universal Total
	[A]	[B]	[C]	[D]	[E]	[F]	[G]

For discussion for the distinction between 'Comparison Benefits' and 'Universal Benefits', see Section 5.3.3 of my report.

[F] = [C] + [D].

[G] = [C] + [E].

Attachment E-9

Comparison Job Effective Wage Analysis, Forced Labor Class

Occupation	Comparison Wage Period 1				Comparison Wage Period 2			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits
Kitchen worker	8.4%	\$ 6.55	\$ -	\$ -	30.9%	\$ 7.25	\$ -	\$ -
Porter	0.0%	\$ 6.55	\$ -	\$ -	0.5%	\$ 7.25	\$ -	\$ -
Shower worker	0.0%	\$ 6.55	\$ -	\$ -	0.5%	\$ 7.25	\$ -	\$ -
Laundry worker	0.0%	\$ 6.55	\$ -	\$ -	0.7%	\$ 7.25	\$ -	\$ -
Commissary worker	0.1%	\$ 6.55	\$ -	\$ -	1.5%	\$ 7.25	\$ -	\$ -
Janitor	0.0%	\$ 6.55	\$ -	\$ -	2.6%	\$ 7.25	\$ -	\$ -
Medical worker	0.0%	\$ 6.55	\$ -	\$ -	0.4%	\$ 7.25	\$ -	\$ -
Barber	0.0%	\$ 6.55	\$ -	\$ -	0.1%	\$ 7.25	\$ -	\$ -
No job identified	91.4%	\$ 6.55	\$ -	\$ -	62.8%	\$ 7.25	\$ -	\$ -
Effective wage		\$ 6.55	\$ -	\$ -		\$ 7.25	\$ -	\$ -

Notes and sources:

For definitions of Comparison Wage Periods, see Attachment E-1.

'Proportion of Analyzable Entry Shifts': Attachment E-2, at 'Percentage' for the associated job.

'Comparison Wage': Attachment E-8, at 'Comparison Wage' for the associated job and Comparison Wage Period.

'Comparison Benefits': Attachment E-8, at 'Comparison Benefits' for the associated job and Comparison Wage Period.

'Universal Benefits': Attachment E-8, at 'Universal Benefits' for the associated job and Comparison Wage Period.

Occupation	Comparison Wage Period 3				Comparison Wage Period 4			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits
Kitchen worker	41.2%	\$ 7.25	\$ -	\$ 3.59	36.3%	\$ 7.25	\$ -	\$ 3.81
Porter	1.1%	\$ 9.25	\$ 3.59	\$ 3.59	12.4%	\$ 9.25	\$ 3.81	\$ 3.81
Shower worker	2.0%	\$ 9.25	\$ 3.59	\$ 3.59	9.7%	\$ 9.25	\$ 3.81	\$ 3.81
Laundry worker	1.6%	\$ 7.25	\$ -	\$ 3.59	2.0%	\$ 7.25	\$ -	\$ 3.81
Commissary worker	2.1%	\$ 10.64	\$ 3.59	\$ 3.59	2.5%	\$ 10.64	\$ 3.81	\$ 3.81
Janitor	5.1%	\$ 9.25	\$ 3.59	\$ 3.59	1.7%	\$ 9.25	\$ 3.81	\$ 3.81
Medical worker	0.4%	\$ 9.25	\$ 3.59	\$ 3.59	0.5%	\$ 9.25	\$ 3.81	\$ 3.81
Barber	0.1%	\$ 7.25	\$ -	\$ 3.59	0.8%	\$ 7.25	\$ -	\$ 3.81
No job identified	46.3%	\$ 7.25	\$ -	\$ 3.59	34.1%	\$ 7.25	\$ -	\$ 3.81
Effective wage		\$ 7.50	\$ 0.39	\$ 3.59		\$ 7.82	\$ 1.02	\$ 3.81

Occupation	Comparison Wage Period 5				Comparison Wage Period 6			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits
Kitchen worker	34.0%	\$ 7.25	\$ -	\$ 3.81	31.1%	\$ 7.25	\$ -	\$ 4.02
Porter	19.6%	\$ 9.25	\$ 3.81	\$ 3.81	13.5%	\$ 9.25	\$ 4.02	\$ 4.02
Shower worker	12.9%	\$ 9.25	\$ 3.81	\$ 3.81	8.6%	\$ 9.25	\$ 4.02	\$ 4.02
Laundry worker	2.6%	\$ 7.25	\$ -	\$ 3.81	3.2%	\$ 7.25	\$ -	\$ 4.02
Commissary worker	2.2%	\$ 10.66	\$ 3.81	\$ 3.81	2.6%	\$ 10.66	\$ 4.02	\$ 4.02
Janitor	0.9%	\$ 9.25	\$ 3.81	\$ 3.81	0.7%	\$ 9.25	\$ 4.02	\$ 4.02
Medical worker	0.3%	\$ 9.25	\$ 3.81	\$ 3.81	0.1%	\$ 9.25	\$ 4.02	\$ 4.02
Barber	1.4%	\$ 7.25	\$ -	\$ 3.81	1.1%	\$ 7.25	\$ -	\$ 4.02
No job identified	26.1%	\$ 7.25	\$ -	\$ 3.81	39.0%	\$ 7.25	\$ -	\$ 4.02
Effective wage		\$ 8.00	\$ 1.37	\$ 3.81		\$ 7.80	\$ 1.03	\$ 4.02

Occupation	Comparison Wage Period 7				Comparison Wage Period 8			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits
Kitchen worker	32.9%	\$ 8.92	\$ 4.48	\$ 4.48	39.3%	\$ 8.92	\$ 4.54	\$ 4.54
Porter	11.6%	\$ 9.41	\$ 4.48	\$ 4.48	11.5%	\$ 9.41	\$ 4.54	\$ 4.54
Shower worker	5.8%	\$ 9.41	\$ 4.48	\$ 4.48	5.3%	\$ 9.41	\$ 4.54	\$ 4.54
Laundry worker	2.9%	\$ 9.39	\$ 4.48	\$ 4.48	2.5%	\$ 9.59	\$ 4.54	\$ 4.54
Commissary worker	1.1%	\$ 11.78	\$ 4.48	\$ 4.48	0.6%	\$ 11.78	\$ 4.54	\$ 4.54
Janitor	0.9%	\$ 9.41	\$ 4.48	\$ 4.48	0.1%	\$ 9.41	\$ 4.54	\$ 4.54
Medical worker	0.2%	\$ 9.41	\$ 4.48	\$ 4.48	0.8%	\$ 9.41	\$ 4.54	\$ 4.54
Barber	1.1%	\$ 7.25	\$ -	\$ 4.48	0.9%	\$ 7.25	\$ -	\$ 4.54
No job identified	43.5%	\$ 7.25	\$ -	\$ 4.48	38.9%	\$ 7.25	\$ -	\$ 4.54
Effective wage		\$ 8.31	\$ 2.48	\$ 4.48		\$ 8.38	\$ 2.73	\$ 4.54

Occupation	Comparison Wage Period 9			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits
Kitchen worker	49.6%	\$ 9.03	\$ 4.54	\$ 4.54
Porter	20.8%	\$ 9.60	\$ 4.54	\$ 4.54
Shower worker	10.3%	\$ 9.60	\$ 4.54	\$ 4.54
Laundry worker	3.3%	\$ 9.78	\$ 4.54	\$ 4.54
Commissary worker	0.6%	\$ 12.41	\$ 4.54	\$ 4.54
Janitor	0.0%	\$ 9.60	\$ 4.54	\$ 4.54
Medical worker	0.2%	\$ 9.60	\$ 4.54	\$ 4.54
Barber	0.9%	\$ 7.25	\$ -	\$ 4.54
No job identified	14.2%	\$ 7.25	\$ -	\$ 4.54
Effective wage		\$ 8.98	\$ 3.85	\$ 4.54

Attachment E-10

Comparison Job Effective Wage Analysis, Unjust Enrichment Class

Occupation	Comparison Wage Period 4				Comparison Wage Period 5			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits
Kitchen worker	35.2%	\$ 7.25	\$ -	\$ 3.81	34.0%	\$ 7.25	\$ -	\$ 3.81
Porter	20.0%	\$ 9.25	\$ 3.81	\$ 3.81	19.6%	\$ 9.25	\$ 3.81	\$ 3.81
Shower worker	16.3%	\$ 9.25	\$ 3.81	\$ 3.81	12.9%	\$ 9.25	\$ 3.81	\$ 3.81
Laundry worker	2.3%	\$ 7.25	\$ -	\$ 3.81	2.6%	\$ 7.25	\$ -	\$ 3.81
Commissary worker	2.4%	\$ 10.64	\$ 3.81	\$ 3.81	2.2%	\$ 10.66	\$ 3.81	\$ 3.81
Janitor	1.4%	\$ 9.25	\$ 3.81	\$ 3.81	0.9%	\$ 9.25	\$ 3.81	\$ 3.81
Medical worker	0.5%	\$ 9.25	\$ 3.81	\$ 3.81	0.3%	\$ 9.25	\$ 3.81	\$ 3.81
Barber	1.3%	\$ 7.25	\$ -	\$ 3.81	1.4%	\$ 7.25	\$ -	\$ 3.81
No job identified	20.6%	\$ 7.25	\$ -	\$ 3.81	26.1%	\$ 7.25	\$ -	\$ 3.81
Effective wage		\$ 8.10	\$ 1.55	\$ 3.81		\$ 8.00	\$ 1.37	\$ 3.81

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1) rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins.

'Proportion of Analyzable Entry Shifts': Attachment E-3, at 'Percentage' for the associated job.

'Comparison Wage': Attachment E-8, at 'Comparison Wage' for the associated job and Comparison Wage Period.

'Comparison Benefits': Attachment E-8, at 'Comparison Benefits' for the associated job and Comparison Wage Period.

'Universal Benefits': Attachment E-8, at 'Universal Benefits' for the associated job and Comparison Wage Period.

Occupation	Comparison Wage Period 6				Comparison Wage Period 7			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits
Kitchen worker	31.1%	\$ 7.25	\$ -	\$ 4.02	32.9%	\$ 8.92	\$ 4.48	\$ 4.48
Porter	13.5%	\$ 9.25	\$ 4.02	\$ 4.02	11.6%	\$ 9.41	\$ 4.48	\$ 4.48
Shower worker	8.6%	\$ 9.25	\$ 4.02	\$ 4.02	5.8%	\$ 9.41	\$ 4.48	\$ 4.48
Laundry worker	3.2%	\$ 7.25	\$ -	\$ 4.02	2.9%	\$ 9.39	\$ 4.48	\$ 4.48
Commissary worker	2.6%	\$ 10.66	\$ 4.02	\$ 4.02	1.1%	\$ 11.78	\$ 4.48	\$ 4.48
Janitor	0.7%	\$ 9.25	\$ 4.02	\$ 4.02	0.9%	\$ 9.41	\$ 4.48	\$ 4.48
Medical worker	0.1%	\$ 9.25	\$ 4.02	\$ 4.02	0.2%	\$ 9.41	\$ 4.48	\$ 4.48
Barber	1.1%	\$ 7.25	\$ -	\$ 4.02	1.1%	\$ 7.25	\$ -	\$ 4.48
No job identified	39.0%	\$ 7.25	\$ -	\$ 4.02	43.5%	\$ 7.25	\$ -	\$ 4.48
Effective wage		\$ 7.80	\$ 1.03	\$ 4.02		\$ 8.31	\$ 2.48	\$ 4.48

Occupation	Comparison Wage Period 8				Comparison Wage Period 9			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits	Proportion of Analyzable Entry Shifts	Comparison Wage	Comparison Benefits	Universal Benefits
Kitchen worker	39.3%	\$ 8.92	\$ 4.54	\$ 4.54	49.6%	\$ 9.03	\$ 4.54	\$ 4.54
Porter	11.5%	\$ 9.41	\$ 4.54	\$ 4.54	20.8%	\$ 9.60	\$ 4.54	\$ 4.54
Shower worker	5.3%	\$ 9.41	\$ 4.54	\$ 4.54	10.3%	\$ 9.60	\$ 4.54	\$ 4.54
Laundry worker	2.5%	\$ 9.59	\$ 4.54	\$ 4.54	3.3%	\$ 9.78	\$ 4.54	\$ 4.54
Commissary worker	0.6%	\$ 11.78	\$ 4.54	\$ 4.54	0.6%	\$ 12.41	\$ 4.54	\$ 4.54
Janitor	0.1%	\$ 9.41	\$ 4.54	\$ 4.54	0.0%	\$ 9.60	\$ 4.54	\$ 4.54
Medical worker	0.8%	\$ 9.41	\$ 4.54	\$ 4.54	0.2%	\$ 9.60	\$ 4.54	\$ 4.54
Barber	0.9%	\$ 7.25	\$ -	\$ 4.54	0.9%	\$ 7.25	\$ -	\$ 4.54
No job identified	38.9%	\$ 7.25	\$ -	\$ 4.54	14.2%	\$ 7.25	\$ -	\$ 4.54
Effective wage		\$ 8.38	\$ 2.73	\$ 4.54		\$ 8.98	\$ 3.85	\$ 4.54

Attachment E-11

Value of VWP Labor in Wages and Benefits Using Comparison Job Effective Wage and Comparison Benefits, Forced Labor Class

Metric	Source	Comparison Wage Period 1	Comparison Wage Period 2	Comparison Wage Period 3	Comparison Wage Period 4	Comparison Wage Period 5
Total hours worked	[A]	293,970	1,063,170	691,404	424,026	1,186,584
Effective comparison job wage	[B]	\$ 6.55	\$ 7.25	\$ 7.50	\$ 7.82	\$ 8.00
Estimated paid hourly wage	[C]	\$ 0.43	\$ 0.37	\$ 0.36	\$ 0.39	\$ 0.41
Effective comparison benefits	[D]	\$ -	\$ -	\$ 0.39	\$ 1.02	\$ 1.37
Effective universal benefits	[E]	\$ -	\$ -	\$ 3.59	\$ 3.81	\$ 3.81
Total value of labor in wages	[F]	\$ 1,798,338	\$ 7,316,692	\$ 4,937,487	\$ 3,151,090	\$ 9,012,738
Total value of labor in comparison benefits	[G]	\$ -	\$ -	\$ 269,465	\$ 433,540	\$ 1,627,541
Total value of labor in universal benefits	[H]	\$ -	\$ -	\$ 2,482,140	\$ 1,615,539	\$ 4,520,885
Total value of labor in wages plus comparison benefits	[I]	\$ 1,798,338	\$ 7,316,692	\$ 5,206,952	\$ 3,584,630	\$ 10,640,279
Total value of labor in wages plus universal benefits	[J]	\$ 1,798,338	\$ 7,316,692	\$ 7,419,627	\$ 4,766,629	\$ 13,533,623

Notes and sources:

For definitions of Comparison Wage Periods, see Attachment E-1.

Note that estimated damages for the classes are not additive.

[A] Attachment E-4, at 'Total hours worked' for each respective Comparison Wage Period

[B] Attachment E-9, at 'Effective wage' for each respective Comparison Wage Period.

[C] Attachment E-6, at 'Estimated paid hourly wage' for each respective Comparison Wage Period

[D] Attachment E-9, at 'Comparison Benefits' for each respective Comparison Wage Period.

[E] Attachment E-9, at 'Universal Benefits' for each respective Comparison Wage Period.

[F] = [A] × ([B] - [C]).

[G] = [A] × [D].

[H] = [A] × [E].

[I] = [F] + [G].

[J] = [F] + [H].

Metric	Comparison Wage Period 6	Comparison Wage Period 7	Comparison Wage Period 8	Comparison Wage Period 9	Total
Total hours worked	673,842	521,742	541,164	136,302	5,532,204
Effective comparison job wage	\$ 7.80	\$ 8.31	\$ 8.38	\$ 8.98	n/a
Estimated paid hourly wage	\$ 0.41	\$ 0.49	\$ 0.51	\$ 0.53	n/a
Effective comparison benefits	\$ 1.03	\$ 2.48	\$ 2.73	\$ 3.85	n/a
Effective universal benefits	\$ 4.02	\$ 4.48	\$ 4.54	\$ 4.54	n/a
Total value of labor in wages	\$ 4,976,488	\$ 4,082,663	\$ 4,257,612	\$ 1,152,286	\$ 40,685,393
Total value of labor in comparison benefits	\$ 692,389	\$ 1,295,213	\$ 1,477,906	\$ 525,242	\$ 6,321,295
Total value of labor in universal benefits	\$ 2,708,845	\$ 2,337,404	\$ 2,456,885	\$ 618,811	\$ 16,740,509
Total value of labor in wages plus comparison benefits	\$ 5,668,877	\$ 5,377,876	\$ 5,735,518	\$ 1,677,527	\$ 47,006,688
Total value of labor in wages plus universal benefits	\$ 7,685,333	\$ 6,420,067	\$ 6,714,496	\$ 1,771,097	\$ 57,425,902

Attachment E-12

Value of VWP Labor in Wages and Benefits Using Comparison Job Effective Wage and Comparison Benefits, Unjust Enrichment Class

Metric	Source	Comparison Wage Period 4	Comparison Wage Period 5	Comparison Wage Period 6	Comparison Wage Period 7	Comparison Wage Period 8
Total hours worked	[A]	204,546	1,186,584	673,842	521,742	541,164
Effective comparison job wage	[B]	\$ 8.10	\$ 8.00	\$ 7.80	\$ 8.31	\$ 8.38
Estimated paid hourly wage	[C]	\$ 0.40	\$ 0.41	\$ 0.41	\$ 0.49	\$ 0.51
Effective comparison benefits	[D]	\$ 1.55	\$ 1.37	\$ 1.03	\$ 2.48	\$ 2.73
Effective universal benefits	[E]	\$ 3.81	\$ 3.81	\$ 4.02	\$ 4.48	\$ 4.54
Total value of labor in wages	[F]	\$ 1,573,845	\$ 9,012,738	\$ 4,976,488	\$ 4,082,663	\$ 4,257,612
Total value of labor in comparison benefits	[G]	\$ 317,000	\$ 1,627,541	\$ 692,389	\$ 1,295,213	\$ 1,477,906
Total value of labor in universal benefits	[H]	\$ 779,320	\$ 4,520,885	\$ 2,708,845	\$ 2,337,404	\$ 2,456,885
Total value of labor in wages plus comparison benefits	[I]	\$ 1,890,845	\$ 10,640,279	\$ 5,668,877	\$ 5,377,876	\$ 5,735,518
Total value of labor in wages plus universal benefits	[J]	\$ 2,353,166	\$ 13,533,623	\$ 7,685,333	\$ 6,420,067	\$ 6,714,496

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1) rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins

Note that estimated damages for the classes are not additive.

[A] Attachment E-5, at 'Total hours worked' for each respective Comparison Wage Period

[B] Attachment E-10, at 'Effective wage' for each respective Comparison Wage Period.

[C] Attachment E-7, at 'Estimated paid hourly wage' for each respective Comparison Wage Period

[D] Attachment E-10, at 'Comparison Benefits' for each respective Comparison Wage Period.

[E] Attachment E-10, at 'Universal Benefits' for each respective Comparison Wage Period.

[F] = [A] × ([B] - [C]).

[G] = [A] × [D].

[H] = [A] × [E].

[I] = [F] + [G].

[J] = [F] + [H].

Metric	Comparison Wage Period 9	Total
Total hours worked	136,302	3,264,180
Effective comparison job wage	\$ 8.98	n/a
Estimated paid hourly wage	\$ 0.53	n/a
Effective comparison benefits	\$ 3.85	n/a
Effective universal benefits	\$ 4.54	n/a
Total value of labor in wages	\$ 1,152,286	\$ 25,055,632
Total value of labor in comparison benefits	\$ 525,242	\$ 5,935,290
Total value of labor in universal benefits	\$ 618,811	\$ 13,422,150
Total value of labor in wages plus comparison benefits	\$ 1,677,527	\$ 30,990,922
Total value of labor in wages plus universal benefits	\$ 1,771,097	\$ 38,477,782

Attachment F-1

EO Minimum Wage History

Calendar Year	Source	Wage Rate
2015	[A]	\$ 10.10
2016	[B]	\$ 10.15
2017	[C]	\$ 10.20
2018	[D]	\$ 10.35
2019	[E]	\$ 10.60
2020	[F]	\$ 10.80

Notes and sources:

[A] Federal Register, "Establishing a Minimum Wage for Contractors," 2/20/2014, available at

<https://www.federalregister.gov/documents/2014/02/20/2014-03805/establishing-a-minimum-wage-for-contractors>.

[B] Federal Register, "Establishing a Minimum Wage for Contractors, Notice of Rate Change in Effect as of January 1, 2017," 9/20/2016, available at

<https://www.federalregister.gov/documents/2016/09/20/2016-22515/establishing-a-minimum-wage-for-contractors-notice-of-rate-change-in-effect-as-of-january-1-2017>.

[C] Federal Register, "Establishing a Minimum Wage for Contractors, Notice of Rate Change in Effect as of January 1, 2017," 9/20/2016, available at

<https://www.federalregister.gov/documents/2016/09/20/2016-22515/establishing-a-minimum-wage-for-contractors-notice-of-rate-change-in-effect-as-of-january-1-2017>.

[D] Federal Register, "Minimum Wage for Federal Contracts Covered by Executive Order 13658, Notice of Rate Change in Effect as of January 1, 2022," 9/16/2021, available at

<https://www.federalregister.gov/documents/2021/09/16/2021-19995/minimum-wage-for-federal-contracts-covered-by-executive-order-13658-notice-of-rate-change-in-effect>.

[E] Federal Register, "Establishing a Minimum Wage for Contractors, Notice of Rate Change in Effect as of January 1, 2020," 9/19/2019, available at

<https://www.federalregister.gov/documents/2019/09/19/2019-19673/establishing-a-minimum-wage-for-contractors-notice-of-rate-change-in-effect-as-of-january-1-2020>.

[F] Federal Register, "Establishing a Minimum Wage for Contractors, Notice of Rate Change in Effect as of January 1, 2020," 9/19/2019, available at

<https://www.federalregister.gov/documents/2019/09/19/2019-19673/establishing-a-minimum-wage-for-contractors-notice-of-rate-change-in-effect-as-of-january-1-2020>.

Attachment F-2

Distribution of Shifts by Jobs Performed in Analyzable Entries of VWP Pay Data by Comparison Wage Period and Year for Periods in EO Minimum Wage Period, Forced Labor Class

Occupation	Comparison Wage Period 1		Comparison Wage Period 2		Comparison Wage Period 3		Comparison Wage Period 4	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	44,772	91.4%	111,282	62.8%	53,361	46.3%	24,120	34.1%
Kitchen Worker	4,120	8.4%	54,805	30.9%	47,487	41.2%	25,644	36.3%
Porter	6	0.0%	970	0.5%	1,312	1.1%	8,759	12.4%
Shower Worker	2	0.0%	939	0.5%	2,346	2.0%	6,862	9.7%
Laundry Worker	22	0.0%	1,318	0.7%	1,793	1.6%	1,394	2.0%
Commissary Worker	48	0.1%	2,614	1.5%	2,432	2.1%	1,752	2.5%
Janitor	21	0.0%	4,532	2.6%	5,912	5.1%	1,205	1.7%
Barber	-	0.0%	89	0.1%	83	0.1%	548	0.8%
Medical Worker	4	0.0%	646	0.4%	508	0.4%	387	0.5%
Total	48,995	100.0%	177,195	100.0%	115,234	100.0%	70,671	100.0%

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods. Note that for this analysis, those periods that are also affected by the annual EO minimum wage change, the periods are further broken up by calendar year.

'Shift Count': See Attachment H-4.

'Percentage' = 'Shift Count' / 'Total' Count for each period.

Occupation	Comparison Wage Period 5							
	9/22/2014–12/31/2014		2015		2016		1/1/2017–3/1/2017	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	3,438	15.8%	13,707	16.9%	27,408	34.5%	7,020	45.8%
Kitchen Worker	7,327	33.7%	27,863	34.3%	27,521	34.6%	4,554	29.7%
Porter	5,372	24.7%	19,873	24.5%	11,925	15.0%	1,666	10.9%
Shower Worker	4,003	18.4%	13,414	16.5%	7,030	8.8%	1,064	6.9%
Laundry Worker	489	2.2%	1,987	2.4%	2,110	2.7%	465	3.0%
Commissary Worker	465	2.1%	1,848	2.3%	1,662	2.1%	347	2.3%
Janitor	234	1.1%	1,001	1.2%	595	0.7%	34	0.2%
Barber	301	1.4%	1,140	1.4%	1,096	1.4%	142	0.9%
Medical Worker	105	0.5%	373	0.5%	134	0.2%	51	0.3%
Total	21,734	100.0%	81,206	100.0%	79,481	100.0%	15,343	100.0%

Occupation	Comparison Wage Period 6				Comparison Wage Period 7			
	3/2/2017-12/31/2017		1/1/2018-7/31/2018		8/1/2018-12/31/2018		1/1/2019-7/31/2019	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	31,686	44.4%	12,138	29.7%	15,272	43.2%	22,513	43.6%
Kitchen Worker	21,474	30.1%	13,431	32.8%	11,788	33.3%	16,791	32.5%
Porter	8,494	11.9%	6,715	16.4%	3,310	9.4%	6,805	13.2%
Shower Worker	4,398	6.2%	5,284	12.9%	2,484	7.0%	2,530	4.9%
Laundry Worker	2,169	3.0%	1,415	3.5%	1,089	3.1%	1,472	2.9%
Commissary Worker	1,766	2.5%	1,170	2.9%	677	1.9%	249	0.5%
Janitor	426	0.6%	391	1.0%	357	1.0%	427	0.8%
Barber	913	1.3%	375	0.9%	360	1.0%	627	1.2%
Medical Worker	62	0.1%	-	0.0%	13	0.0%	193	0.4%
Total	71,388	100.0%	40,919	100.0%	35,350	100.0%	51,607	100.0%

Occupation	Comparison Wage Period 8				Comparison Wage Period 9		Total	
	8/1/2019–12/31/2019		1/1/2020–7/31/2020		Shift Count	Percentage	Shift Count	Percentage
	Shift Count	Percentage	Shift Count	Percentage				
No Job Identified	17,929	44.1%	17,170	34.6%	3,236	14.2%	405,052	43.9%
Kitchen Worker	14,900	36.7%	20,571	41.5%	11,276	49.6%	309,552	33.6%
Porter	3,759	9.3%	6,598	13.3%	4,733	20.8%	90,297	9.8%
Shower Worker	1,959	4.8%	2,777	5.6%	2,337	10.3%	57,429	6.2%
Laundry Worker	1,125	2.8%	1,160	2.3%	744	3.3%	18,752	2.0%
Commissary Worker	217	0.5%	365	0.7%	140	0.6%	15,752	1.7%
Janitor	-	0.0%	79	0.2%	5	0.0%	15,219	1.7%
Barber	463	1.1%	377	0.8%	199	0.9%	6,713	0.7%
Medical Worker	275	0.7%	470	0.9%	47	0.2%	3,268	0.4%
Total	40,627	100.0%	49,567	100.0%	22,717	100.0%	922,034	100.0%

Attachment F-3

Distribution of Shifts by Jobs Performed in Analyzable Entries of VWP Pay Data by Comparison Wage Period and Year for Periods in EO Minimum Wage Period, Unjust Enrichment Class

Occupation	Comparison Wage Period 4		Comparison Wage Period 5					
	Shift Count	Percentage	9/22/2014–12/31/2014		2015		2016	
			Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	7,008	20.6%	3,438	15.8%	13,707	16.9%	27,408	34.5%
Kitchen Worker	11,984	35.2%	7,327	33.7%	27,863	34.3%	27,521	34.6%
Porter	6,820	20.0%	5,372	24.7%	19,873	24.5%	11,925	15.0%
Shower Worker	5,572	16.3%	4,003	18.4%	13,414	16.5%	7,030	8.8%
Laundry Worker	775	2.3%	489	2.2%	1,987	2.4%	2,110	2.7%
Commissary Worker	817	2.4%	465	2.1%	1,848	2.3%	1,662	2.1%
Janitor	487	1.4%	234	1.1%	1,001	1.2%	595	0.7%
Barber	457	1.3%	301	1.4%	1,140	1.4%	1,096	1.4%
Medical Worker	171	0.5%	105	0.5%	373	0.5%	134	0.2%
Total	34,091	100.0%	21,734	100.0%	81,206	100.0%	79,481	100.0%

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods. Note that for this analysis, those periods that are also affected by the annual EO minimum wage change, the periods are further broken up by calendar year.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1) rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins.

'Shift Count': See Attachment H-4.

'Percentage' = 'Shift Count' / 'Total' Count for each period.

Occupation	Comparison Wage Period 5		Comparison Wage Period 6			
	1/1/2017–3/1/2017		3/2/2017–12/31/2017		1/1/2018–7/31/2018	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	7,020	45.8%	31,686	44.4%	12,138	29.7%
Kitchen Worker	4,554	29.7%	21,474	30.1%	13,431	32.8%
Porter	1,666	10.9%	8,494	11.9%	6,715	16.4%
Shower Worker	1,064	6.9%	4,398	6.2%	5,284	12.9%
Laundry Worker	465	3.0%	2,169	3.0%	1,415	3.5%
Commissary Worker	347	2.3%	1,766	2.5%	1,170	2.9%
Janitor	34	0.2%	426	0.6%	391	1.0%
Barber	142	0.9%	913	1.3%	375	0.9%
Medical Worker	51	0.3%	62	0.1%	-	0.0%
Total	15,343	100.0%	71,388	100.0%	40,919	100.0%

Occupation	Comparison Wage Period 7				Comparison Wage Period 8			
	8/1/2018-12/31/2018		1/1/2019-7/31/2019		8/1/2019-12/31/2019		1/1/2020-7/31/2020	
	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	15,272	43.2%	22,513	43.6%	17,929	44.1%	17,170	34.6%
Kitchen Worker	11,788	33.3%	16,791	32.5%	14,900	36.7%	20,571	41.5%
Porter	3,310	9.4%	6,805	13.2%	3,759	9.3%	6,598	13.3%
Shower Worker	2,484	7.0%	2,530	4.9%	1,959	4.8%	2,777	5.6%
Laundry Worker	1,089	3.1%	1,472	2.9%	1,125	2.8%	1,160	2.3%
Commissary Worker	677	1.9%	249	0.5%	217	0.5%	365	0.7%
Janitor	357	1.0%	427	0.8%	-	0.0%	79	0.2%
Barber	360	1.0%	627	1.2%	463	1.1%	377	0.8%
Medical Worker	13	0.0%	193	0.4%	275	0.7%	470	0.9%
Total	35,350	100.0%	51,607	100.0%	40,627	100.0%	49,567	100.0%

Occupation	Comparison Wage Period 9		Total	
	Shift Count	Percentage	Shift Count	Percentage
No Job Identified	3,236	14.2%	178,525	32.8%
Kitchen Worker	11,276	49.6%	189,480	34.8%
Porter	4,733	20.8%	86,070	15.8%
Shower Worker	2,337	10.3%	52,852	9.7%
Laundry Worker	744	3.3%	15,000	2.8%
Commissary Worker	140	0.6%	9,723	1.8%
Janitor	5	0.0%	4,036	0.7%
Barber	199	0.9%	6,450	1.2%
Medical Worker	47	0.2%	1,894	0.3%
Total	22,717	100.0%	544,030	100.0%

Attachment F-4

Hours Worked in CoreCivic's VWP Pay Data by Comparison Wage Period and Year for Periods in EO Minimum Wage Period, Forced Labor Class

Metric	Source	Comparison Wage Period 1	Comparison Wage Period 2	Comparison Wage Period 3	Comparison Wage Period 4
Total shifts	[A]	48,995	177,195	115,234	70,671
Hours per shift	[B]	6	6	6	6
Total hours worked	[C]	293,970	1,063,170	691,404	424,026

Notes and sources:

For definitions of Comparison Wage Periods, see Attachment E-1 Note that for this analysis, those periods that are also affected by the annual EO minimum wage change, the periods are further broken up by calendar year.

[A] Attachment F-2, at total 'Shift Count' for each respective Comparison Wage Period.

[B] See Section 5 of my report for a discussion of assumptions used in my analysis

[C] = [A] × [B].

Metric	Comparison Wage Period 5				Comparison Wage Period 6	
	9/22/2014– 12/31/2014	2015	2016	1/1/2017– 3/1/2017	3/2/2017– 12/31/2017	1/1/2018– 7/31/2018
Total shifts	21,734	81,206	79,481	15,343	71,388	40,919
Hours per shift	6	6	6	6	6	6
Total hours worked	130,404	487,236	476,886	92,058	428,328	245,514

Metric	Comparison Wage Period 7		Comparison Wage Period 8		Comparison Wage Period 9	Total
	8/1/2018– 12/31/2018	1/1/2019– 7/31/2019	8/1/2019– 12/31/2019	1/1/2020– 7/31/2020		
Total shifts	35,350	51,607	40,627	49,567	22,717	922,034
Hours per shift	6	6	6	6	6	6
Total hours worked	212,100	309,642	243,762	297,402	136,302	5,532,204

Attachment F-5

Hours Worked in CoreCivic's VWP Pay Data by Comparison Wage Period and Year for Periods in EO Minimum Wage Period, Unjust Enrichment Class

Metric	Source	Comparison Wage Period 4	Comparison Wage Period 5			
			9/22/2014–12/31/2014	2015	2016	1/1/2017–3/1/2017
Total shifts	[A]	34,091	21,734	81,206	79,481	15,343
Hours per shift	[B]	6	6	6	6	6
Total hours worked	[C]	204,546	130,404	487,236	476,886	92,058

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods. Note that for this analysis, those periods that are also affected by the annual EO minimum wage change, the periods are further broken up by calendar year.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1 rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins

[A] Attachment F-3, at total 'Shift Count' for each respective Comparison Wage Period.

[B] See Section 5 of my report for a discussion of assumptions used in my analysis

[C] = [A] × [B].

Metric	Comparison Wage Period 6		Comparison Wage Period 7		Comparison Wage Period 8	
	3/2/2017– 12/31/2017	1/1/2018– 7/31/2018	8/1/2018– 12/31/2018	1/1/2019– 7/31/2019	8/1/2019– 12/31/2019	1/1/2020– 7/31/2020
Total shifts	71,388	40,919	35,350	51,607	40,627	49,567
Hours per shift	6	6	6	6	6	6
Total hours worked	428,328	245,514	212,100	309,642	243,762	297,402

Metric	Comparison Wage Period 9	Total
Total shifts	22,717	544,030
Hours per shift	6	6
Total hours worked	136,302	3,264,180

Attachment F-6

Estimated Paid Hourly Wage of VWP Participants by Comparison Wage Period and Year for Periods in EO Minimum Wage Period, Forced Labor Class

Metric	Source	Comparison Wage Period 1	Comparison Wage Period 2	Comparison Wage Period 3	Comparison Wage Period 4
Total paid wages	[A]	\$ 127,166	\$ 391,291	\$ 245,595	\$ 165,290
Total hours worked	[B]	293,970	1,063,170	691,404	424,026
Estimated paid hourly wage	[C]	\$ 0.43	\$ 0.37	\$ 0.36	\$ 0.39

Notes and sources:

For definitions of Comparison Wage Periods, see Attachment E-1. Note that for this analysis, those periods that are also affected by the annual EO minimum wage change, the periods are further broken up by calendar year.

[A] See Attachment H-4.

For detailed discussion of my analysis of the CoreCivic VWP data, see Section 5 of my report

[B] Attachment F-4, at [C].

[C] = [A] / [B].

Metric	Comparison Wage Period 5				Comparison Wage Period 6	
	9/22/2014– 12/31/2014	2015	2016	1/1/2017– 3/1/2017	3/2/2017– 12/31/2017	1/1/2018– 7/31/2018
Total paid wages	\$ 51,658	\$ 196,212	\$ 195,527	\$ 37,515	\$ 172,443	\$ 105,734
Total hours worked	130,404	487,236	476,886	92,058	428,328	245,514
Estimated paid hourly wage	\$ 0.40	\$ 0.40	\$ 0.41	\$ 0.41	\$ 0.40	\$ 0.43

Metric	Comparison Wage Period 7		Comparison Wage Period 8		Comparison Wage Period 9	Total
	8/1/2018– 12/31/2018	1/1/2019– 7/31/2019	8/1/2019– 12/31/2019	1/1/2020– 7/31/2020		
Total paid wages	\$ 99,297	\$ 153,985	\$ 124,191	\$ 151,240	\$ 72,380	\$ 2,289,524
Total hours worked	212,100	309,642	243,762	297,402	136,302	5,532,204
Estimated paid hourly wage	\$ 0.47	\$ 0.50	\$ 0.51	\$ 0.51	\$ 0.53	\$ 0.41

Attachment F-7

Estimated Paid Hourly Wage of VWP Participants by Comparison Wage Period and Year for Periods in EO Minimum Wage Period, Unjust Enrichment Class

Metric	Source	Comparison Wage Period 4	Comparison Wage Period 5			
			9/22/2014–12/31/2014	2015	2016	1/1/2017–3/1/2017
Total paid wages	[A]	\$ 82,331	\$ 51,658	\$ 196,212	\$ 195,527	\$ 37,515
Total hours worked	[B]	204,546	130,404	487,236	476,886	92,058
Estimated paid hourly wage	[C]	\$ 0.40	\$ 0.40	\$ 0.40	\$ 0.41	\$ 0.41

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods. Note that for this analysis, those periods that are also affected by the annual EO minimum wage change, the periods are further broken up by calendar year.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1 rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins

[A] See Attachment H-4.

For detailed discussion of my analysis of the CoreCivic VWP data, see Section 5 of my report

[B] Attachment F-5, at [C].

[C] = [A] / [B].

Metric	Comparison Wage Period 6		Comparison Wage Period 7		Comparison Wage Period 8	
	3/2/2017– 12/31/2017	1/1/2018– 7/31/2018	8/1/2018– 12/31/2018	1/1/2019– 7/31/2019	8/1/2019– 12/31/2019	1/1/2020– 7/31/2020
Total paid wages	\$ 172,443	\$ 105,734	\$ 99,297	\$ 153,985	\$ 124,191	\$ 151,240
Total hours worked	428,328	245,514	212,100	309,642	243,762	297,402
Estimated paid hourly wage	\$ 0.40	\$ 0.43	\$ 0.47	\$ 0.50	\$ 0.51	\$ 0.51

Metric	Comparison Wage Period 9	Total
Total paid wages	\$ 72,380	\$ 1,442,513
Total hours worked	136,302	3,264,180
Estimated paid hourly wage	\$ 0.53	\$ 0.44

Attachment F-8

Comparison Job and EO Minimum Wage Effective Wage Analysis, Forced Labor Class

Occupation	Comparison Wage Period 1		Comparison Wage Period 2		Comparison Wage Period 3		Comparison Wage Period 4	
	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage
Kitchen worker	8.4%	\$ 6.55	30.9%	\$ 7.25	41.2%	\$ 7.25	36.3%	\$ 7.25
Porter	0.0%	\$ 6.55	0.5%	\$ 7.25	1.1%	\$ 9.25	12.4%	\$ 9.25
Shower worker	0.0%	\$ 6.55	0.5%	\$ 7.25	2.0%	\$ 9.25	9.7%	\$ 9.25
Laundry worker	0.0%	\$ 6.55	0.7%	\$ 7.25	1.6%	\$ 7.25	2.0%	\$ 7.25
Commissary worker	0.1%	\$ 6.55	1.5%	\$ 7.25	2.1%	\$ 10.64	2.5%	\$ 10.64
Janitor	0.0%	\$ 6.55	2.6%	\$ 7.25	5.1%	\$ 9.25	1.7%	\$ 9.25
Medical worker	0.0%	\$ 6.55	0.4%	\$ 7.25	0.4%	\$ 9.25	0.5%	\$ 9.25
Barber	0.0%	\$ 6.55	0.1%	\$ 7.25	0.1%	\$ 7.25	0.8%	\$ 7.25
No job identified	91.4%	\$ 6.55	62.8%	\$ 7.25	46.3%	\$ 7.25	34.1%	\$ 7.25
Effective wage		\$ 6.55		\$ 7.25		\$ 7.50		\$ 7.82

Notes and sources:

For definitions of Comparison Wage Periods, see Attachment E-1. Note that for this analysis, those periods that are also affected by the annual EO minimum wage change, the periods are further broken up by calendar year.

'Proportion of Analyzable Entry Shifts': Attachment F-2, at 'Percentage' for the associated job.

'Comparison Wage': Attachment E-8, at 'Comparison Wage' for the associated job and Comparison Wage Period for periods prior to EO 13658 or without a Comparison job.

For periods covered by EO 13658, the comparison wage is the higher of either the comparison wage provided in Attachment E-10 or the EO minimum wage in effect shown in Attachment F-1.

Occupation	Comparison Wage Period 5							
	9/22/2014–12/31/2014		2015		2016		1/1/2017–3/1/2017	
	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage
Kitchen worker	33.7%	\$ 7.25	34.3%	\$ 7.25	34.6%	\$ 7.25	29.7%	\$ 7.25
Porter	24.7%	\$ 9.25	24.5%	\$ 10.10	15.0%	\$ 10.15	10.9%	\$ 10.20
Shower worker	18.4%	\$ 9.25	16.5%	\$ 10.10	8.8%	\$ 10.15	6.9%	\$ 10.20
Laundry worker	2.2%	\$ 7.25	2.4%	\$ 7.25	2.7%	\$ 7.25	3.0%	\$ 7.25
Commissary worker	2.1%	\$ 10.66	2.3%	\$ 10.66	2.1%	\$ 10.66	2.3%	\$ 10.66
Janitor	1.1%	\$ 9.25	1.2%	\$ 10.10	0.7%	\$ 10.15	0.2%	\$ 10.20
Medical worker	0.5%	\$ 9.25	0.5%	\$ 10.10	0.2%	\$ 10.15	0.3%	\$ 10.20
Barber	1.4%	\$ 7.25	1.4%	\$ 7.25	1.4%	\$ 7.25	0.9%	\$ 7.25
No job identified	15.8%	\$ 7.25	16.9%	\$ 7.25	34.5%	\$ 7.25	45.8%	\$ 7.25
Effective wage		\$ 8.22		\$ 8.54		\$ 8.04		\$ 7.87

Occupation	Comparison Wage Period 6				Comparison Wage Period 7			
	3/2/2017–12/31/2017		1/1/2018–7/31/2018		8/1/2018–12/31/2018		1/1/2019–7/31/2019	
	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage
Kitchen worker	30.1%	\$ 7.25	32.8%	\$ 7.25	33.3%	\$ 10.35	32.5%	\$ 10.60
Porter	11.9%	\$ 10.20	16.4%	\$ 10.35	9.4%	\$ 10.35	13.2%	\$ 10.60
Shower worker	6.2%	\$ 10.20	12.9%	\$ 10.35	7.0%	\$ 10.35	4.9%	\$ 10.60
Laundry worker	3.0%	\$ 7.25	3.5%	\$ 7.25	3.1%	\$ 10.35	2.9%	\$ 10.60
Commissary worker	2.5%	\$ 10.66	2.9%	\$ 10.66	1.9%	\$ 11.78	0.5%	\$ 11.78
Janitor	0.6%	\$ 10.20	1.0%	\$ 10.35	1.0%	\$ 10.35	0.8%	\$ 10.60
Medical worker	0.1%	\$ 10.20	0.0%	\$ 10.35	0.0%	\$ 10.35	0.4%	\$ 10.60
Barber	1.3%	\$ 7.25	0.9%	\$ 7.25	1.0%	\$ 7.25	1.2%	\$ 7.25
No job identified	44.4%	\$ 7.25	29.7%	\$ 7.25	43.2%	\$ 7.25	43.6%	\$ 7.25
Effective wage		\$ 7.89		\$ 8.29		\$ 9.01		\$ 9.10

Occupation	Comparison Wage Period 8				Comparison Wage Period 9	
	8/1/2019–12/31/2019		1/1/2020–7/31/2020			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage
Kitchen worker	36.7%	\$ 10.60	41.5%	\$ 10.80	49.6%	\$ 10.80
Porter	9.3%	\$ 10.60	13.3%	\$ 10.80	20.8%	\$ 10.80
Shower worker	4.8%	\$ 10.60	5.6%	\$ 10.80	10.3%	\$ 10.80
Laundry worker	2.8%	\$ 10.60	2.3%	\$ 10.80	3.3%	\$ 10.80
Commissary worker	0.5%	\$ 11.78	0.7%	\$ 11.78	0.6%	\$ 12.41
Janitor	0.0%	\$ 10.60	0.2%	\$ 10.80	0.0%	\$ 10.80
Medical worker	0.7%	\$ 10.60	0.9%	\$ 10.80	0.2%	\$ 10.80
Barber	1.1%	\$ 7.25	0.8%	\$ 7.25	0.9%	\$ 7.25
No job identified	44.1%	\$ 7.25	34.6%	\$ 7.25	14.2%	\$ 7.25
Effective wage		\$ 9.09		\$ 9.55		\$ 10.27

Attachment F-9

Comparison Job and EO Minimum Wage Effective Wage Analysis, Unjust Enrichment Class

Occupation	Comparison Wage Period 4		Comparison Wage Period 5							
	Proportion of Analyzable Entry Shifts	Comparison Wage	9/22/2014–12/31/2014		2015		2016		1/1/2017–3/1/2017	
			Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage
Kitchen worker	35.2%	\$ 7.25	33.7%	\$ 7.25	34.3%	\$ 7.25	34.6%	\$ 7.25	29.7%	\$ 7.25
Porter	20.0%	\$ 9.25	24.7%	\$ 9.25	24.5%	\$ 10.10	15.0%	\$ 10.15	10.9%	\$ 10.20
Shower worker	16.3%	\$ 9.25	18.4%	\$ 9.25	16.5%	\$ 10.10	8.8%	\$ 10.15	6.9%	\$ 10.20
Laundry worker	2.3%	\$ 7.25	2.2%	\$ 7.25	2.4%	\$ 7.25	2.7%	\$ 7.25	3.0%	\$ 7.25
Commissary worker	2.4%	\$ 10.64	2.1%	\$ 10.66	2.3%	\$ 10.66	2.1%	\$ 10.66	2.3%	\$ 10.66
Janitor	1.4%	\$ 9.25	1.1%	\$ 9.25	1.2%	\$ 10.10	0.7%	\$ 10.15	0.2%	\$ 10.20
Medical worker	0.5%	\$ 9.25	0.5%	\$ 9.25	0.5%	\$ 10.10	0.2%	\$ 10.15	0.3%	\$ 10.20
Barber	1.3%	\$ 7.25	1.4%	\$ 7.25	1.4%	\$ 7.25	1.4%	\$ 7.25	0.9%	\$ 7.25
No job identified	20.6%	\$ 7.25	15.8%	\$ 7.25	16.9%	\$ 7.25	34.5%	\$ 7.25	45.8%	\$ 7.25
Effective wage		\$ 8.10		\$ 8.22		\$ 8.54		\$ 8.04		\$ 7.87

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods. Note that for this analysis, those periods that are also affected by the annual EO minimum wage change, the periods are further broken up by calendar year.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1) rather than the

Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins.

'Proportion of Analyzable Entry Shifts': Attachment F-3, at 'Percentage' for the associated job.

'Comparison Wage': Attachment E-8, at 'Comparison Wage' for the associated job and Comparison Wage Period for periods prior to EO 13658 or without a Comparison job.

For periods covered by EO 13658, the comparison wage is the higher of either the comparison wage provided in Comparison Job Effective Wage Analysis, Unjust Enrichment Class or the EO minimum wage in effect shown in EO Minimum Wage History.

Occupation	Comparison Wage Period 6				Comparison Wage Period 7			
	3/2/2017–12/31/2017		1/1/2018–7/31/2018		8/1/2018–12/31/2018		1/1/2019–7/31/2019	
	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage
Kitchen worker	30.1%	\$ 7.25	32.8%	\$ 7.25	33.3%	\$ 10.35	32.5%	\$ 10.60
Porter	11.9%	\$ 10.20	16.4%	\$ 10.35	9.4%	\$ 10.35	13.2%	\$ 10.60
Shower worker	6.2%	\$ 10.20	12.9%	\$ 10.35	7.0%	\$ 10.35	4.9%	\$ 10.60
Laundry worker	3.0%	\$ 7.25	3.5%	\$ 7.25	3.1%	\$ 10.35	2.9%	\$ 10.60
Commissary worker	2.5%	\$ 10.66	2.9%	\$ 10.66	1.9%	\$ 11.78	0.5%	\$ 11.78
Janitor	0.6%	\$ 10.20	1.0%	\$ 10.35	1.0%	\$ 10.35	0.8%	\$ 10.60
Medical worker	0.1%	\$ 10.20	0.0%	\$ 10.35	0.0%	\$ 10.35	0.4%	\$ 10.60
Barber	1.3%	\$ 7.25	0.9%	\$ 7.25	1.0%	\$ 7.25	1.2%	\$ 7.25
No job identified	44.4%	\$ 7.25	29.7%	\$ 7.25	43.2%	\$ 7.25	43.6%	\$ 7.25
Effective wage		\$ 7.89		\$ 8.29		\$ 9.01		\$ 9.10

Occupation	Comparison Wage Period 8				Comparison Wage Period 9	
	8/1/2019–12/31/2019		1/1/2020–7/31/2020			
	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage	Proportion of Analyzable Entry Shifts	Comparison Wage
Kitchen worker	36.7%	\$ 10.60	41.5%	\$ 10.80	49.6%	\$ 10.80
Porter	9.3%	\$ 10.60	13.3%	\$ 10.80	20.8%	\$ 10.80
Shower worker	4.8%	\$ 10.60	5.6%	\$ 10.80	10.3%	\$ 10.80
Laundry worker	2.8%	\$ 10.60	2.3%	\$ 10.80	3.3%	\$ 10.80
Commissary worker	0.5%	\$ 11.78	0.7%	\$ 11.78	0.6%	\$ 12.41
Janitor	0.0%	\$ 10.60	0.2%	\$ 10.80	0.0%	\$ 10.80
Medical worker	0.7%	\$ 10.60	0.9%	\$ 10.80	0.2%	\$ 10.80
Barber	1.1%	\$ 7.25	0.8%	\$ 7.25	0.9%	\$ 7.25
No job identified	44.1%	\$ 7.25	34.6%	\$ 7.25	14.2%	\$ 7.25
Effective wage		\$ 9.09		\$ 9.55		\$ 10.27

Attachment F-10

Value of VWP Labor in Wages Using Comparison Occupation Job Wage and EO Minimum Wage Effective Wage, Forced Labor Class

Metric	Source	Comparison Wage Period 1	Comparison Wage Period 2	Comparison Wage Period 3	Comparison Wage Period 4
Total hours worked	[A]	293,970	1,063,170	691,404	424,026
Effective wage	[B]	\$ 6.55	\$ 7.25	\$ 7.50	\$ 7.82
Estimated paid hourly wage	[C]	\$ 0.43	\$ 0.37	\$ 0.36	\$ 0.39
Total value of labor in wages	[D]	\$ 1,798,338	\$ 7,316,692	\$ 4,937,487	\$ 3,151,090

Notes and sources:

For definitions of Comparison Wage Periods, see Attachment E-1.

Note that estimated damages for the classes are not additive.

[A] Attachment F-4, at 'Total hours worked' for each respective Comparison Wage Period

[B] Attachment F-8, at 'Effective wage' for each respective Comparison Wage Period.

[C] Attachment F-6, at 'Estimated paid hourly wage' for each respective Comparison Wage Period

[D] = [A] × ([B] - [C]).

Metric	Comparison Wage Period 5				Comparison Wage Period 6	
	9/22/2014– 12/31/2014	2015	2016	1/1/2017– 3/1/2017	3/2/2017– 12/31/2017	1/1/2018– 7/31/2018
Total hours worked	130,404	487,236	476,886	92,058	428,328	245,514
Effective wage	\$ 8.22	\$ 8.54	\$ 8.04	\$ 7.87	\$ 7.89	\$ 8.29
Estimated paid hourly wage	\$ 0.40	\$ 0.40	\$ 0.41	\$ 0.41	\$ 0.40	\$ 0.43
Total value of labor in wages	\$ 1,019,853	\$ 3,966,762	\$ 3,638,403	\$ 686,831	\$ 3,205,893	\$ 1,928,635

Metric	Comparison Wage Period 7		Comparison Wage Period 8		Comparison Wage Period 9	Total
	8/1/2018– 12/31/2018	1/1/2019– 7/31/2019	8/1/2019– 12/31/2019	1/1/2020– 7/31/2020		
Total hours worked	212,100	309,642	243,762	297,402	136,302	5,532,204
Effective wage	\$ 9.01	\$ 9.10	\$ 9.09	\$ 9.55	\$ 10.27	n/a
Estimated paid hourly wage	\$ 0.47	\$ 0.50	\$ 0.51	\$ 0.51	\$ 0.53	n/a
Total value of labor in wages	\$ 1,810,991	\$ 2,664,869	\$ 2,091,543	\$ 2,689,097	\$ 1,327,869	\$ 42,234,352

Attachment F-11

Value of VWP Labor in Wages Using Comparison Occupation Job Wage and EO Minimum Wage Effective Wage, Unjust Enrichment Class

Metric	Source	Comparison Wage Period 4	Comparison Wage Period 5			
			9/22/2014–12/31/2014	2015	2016	1/1/2017–3/1/2017
Total hours worked	[A]	204,546	130,404	487,236	476,886	92,058
Effective wage	[B]	\$ 8.10	\$ 8.22	\$ 8.54	\$ 8.04	\$ 7.87
Estimated paid hourly wage	[C]	\$ 0.40	\$ 0.40	\$ 0.40	\$ 0.41	\$ 0.41
Total value of labor in wages	[D]	\$ 1,573,845	\$ 1,019,853	\$ 3,966,762	\$ 3,638,403	\$ 686,831

Notes and sources:

See Attachment E-1 for definitions of Comparison Wage Periods.

Note that the UE class start date is within Comparison Wage Period 4. As such, the analysis start date for the UE class is the class start date (see Attachment B-1) rather than the Comparison Wage Period 4 start date, and the Comparison Wage Period 4 rates apply until the next wage period begins

Note that estimated damages for the classes are not additive.

[A] Attachment F-5, at 'Total hours worked' for each respective Comparison Wage Period

[B] Attachment F-9, at 'Effective wage' for each respective Comparison Wage Period.

[C] Attachment F-7, at 'Estimated paid hourly wage' for each respective Comparison Wage Period

[D] = [A] × ([B] - [C]).

Metric	Comparison Wage Period 6		Comparison Wage Period 7		Comparison Wage Period 8	
	3/2/2017– 12/31/2017	1/1/2018– 7/31/2018	8/1/2018– 12/31/2018	1/1/2019– 7/31/2019	8/1/2019– 12/31/2019	1/1/2020– 7/31/2020
Total hours worked	428,328	245,514	212,100	309,642	243,762	297,402
Effective wage	\$ 7.89	\$ 8.29	\$ 9.01	\$ 9.10	\$ 9.09	\$ 9.55
Estimated paid hourly wage	\$ 0.40	\$ 0.43	\$ 0.47	\$ 0.50	\$ 0.51	\$ 0.51
Total value of labor in wages	\$ 3,205,893	\$ 1,928,635	\$ 1,810,991	\$ 2,664,869	\$ 2,091,543	\$ 2,689,097

Metric	Comparison Wage Period 9	Total
Total hours worked	136,302	3,264,180
Effective wage	\$ 10.27	n/a
Estimated paid hourly wage	\$ 0.53	n/a
Total value of labor in wages	\$ 1,327,869	\$ 26,604,591

Attachment G-1

Damages Summary

Class	Value of Labor in Wages			Value of Labor in Benefits	
	Minimum Wage	Comparison Wage	EO Minimum Wage	Comparison Benefits	Universal Benefits
	[A]	[B]	[C]	[D]	[E]
Forced Labor class	\$ 37,613,176	\$ 40,685,393	\$ 42,234,352	\$ 6,321,295	\$ 16,740,509
Unjust Enrichment class	\$ 22,222,792	\$ 25,055,632	\$ 26,604,591	\$ 5,935,290	\$ 13,422,150

Notes and sources:

Note that estimated damages for the classes are not additive.

[A] 'Forced Labor class': Attachment D-6, at [D] for 'Forced Labor Class'.

'Unjust Enrichment class': Attachment D-6, at [D] for 'Unjust Enrichment Class'.

[B] 'Forced Labor class': Attachment E-11, at [F] at column 'Total'.

'Unjust Enrichment class': Attachment E-12, at [F] at column 'Total'.

[C] 'Forced Labor class': Attachment F-10, at [D] at column 'Total'.

'Unjust Enrichment class': Attachment F-11, at [D] at column 'Total'.

[D] 'Forced Labor class': Attachment E-11, at [G] at column 'Total'.

'Unjust Enrichment class': Attachment E-12, at [G] at column 'Total'.

[E] 'Forced Labor class': Attachment E-11, at [H] at column 'Total'.

'Unjust Enrichment class': Attachment E-12, at [H] at column 'Total'.

Attachment H-1

STATA Code for Data Preparation

* (c) 2021 Intensity LLC

*** 1. Setup

clear matrix

clear mata

clear

set maxvar 32767

set matsize 11000

set more off, perm

set type double, perm

pause on

log using "[PATH]\data_preparation.log", replace

local input "[PATH]"

local output "[PATH]"

cd `output'

*** 2. Import pay data

*Dec. 2008

import excel "`input'\VWP Participants - Dec. 2008.xlsx", sheet("Sheet1") firstrow clear

rename *, lower

rename * (agency_num detainee_name receipt_num deposit_from amount description date)

save "`output'\VWP_2008_1.dta", replace

clear

*2009

import excel "`input'\VWP Participants - 2009.xlsx", sheet("Sheet1") firstrow clear

rename *, lower

rename * (agency_num detainee_name receipt_num deposit_from amount description date)

```

save "`output'\VWP_2009_1.dta", replace
clear

import excel "`input'\VWP Participants - 2009.xlsx", sheet("Sheet3") clear
rename (A B C D E F G) (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2009_2.dta", replace
clear

*2010
import excel "`input'\VWP Participants - 2010.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2010_1.dta", replace
clear

*2011
import excel "`input'\VWP Participants - 2011.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2011_1.dta", replace
clear

*2012
import excel "`input'\VWP Participants - 2012.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2012_1.dta", replace
clear

import excel "`input'\VWP Participants - 2012.xlsx", sheet("Sheet3") clear
rename (A B C D E F G) (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2012_2.dta", replace
clear

*2013
import excel "`input'\VWP Participants - 2013.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2013_1.dta", replace
clear

```

```

*2014
import excel "`input'\VWP Participants - 2014.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2014_1.dta", replace
clear

*2015
import excel "`input'\VWP Participants - 2015.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2015_1.dta", replace
clear

import excel "`input'\VWP Participants - 2015.xlsx", sheet("Sheet3") clear
rename (A B C D E F G) (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2012_2.dta", replace
clear

*2016
import excel "`input'\VWP Participants - 2016.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2016_1.dta", replace
clear

*2017
import excel "`input'\VWP Participants - 2017.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2017_1.dta", replace
clear

*2018 (jan.-sept.)
import excel "`input'\VWP Participants - Jan.-Sept. 2018.xlsx", sheet("Sheet1") firstrow clear
rename *, lower
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
save "`output'\VWP_2018_1.dta", replace
clear

* CCBVA0000106554 (2018-2019)

```



```

import excel "`input'\CCBVA0000106554.xlsx", sheet("Sheet 1") firstrow clear
rename *, lower
rename transaction_date date
drop facility reversed billing_agency
rename * (agency_num detainee_name receipt_num deposit_from amount description date)
gen date2 = dofc(date)
format date2 %td
drop date
rename date2 date
save "`output'\2019_1.dta", replace
clear

```

```

*****
*** 2. Append data
*****

```

```

use "`output'\VWP_2008_1.dta"
append using "`output'\VWP_2009_1.dta"
append using "`output'\VWP_2009_2.dta"
append using "`output'\VWP_2010_1.dta"
append using "`output'\VWP_2011_1.dta"
append using "`output'\VWP_2012_1.dta"
append using "`output'\VWP_2012_2.dta"
append using "`output'\VWP_2013_1.dta"
append using "`output'\VWP_2014_1.dta"
append using "`output'\VWP_2015_1.dta"
append using "`output'\VWP_2016_1.dta"
append using "`output'\VWP_2017_1.dta"
append using "`output'\VWP_2018_1.dta"
append using "`output'\2019_1.dta"
save "`output'\full_pay_data.dta", replace

```

```

*****
*** 3. Initial data preparation
*****

```

```

use "`output'\full_pay_data.dta", replace
gen year = year(date)
gen year_str = string(year)
gen month = month(date)
gen month_str = string(month)

```

```

gen day = day(date)
gen day_str = string(day)

* Generate class indicators
gen forced_labor = 0
replace forced_labor = 1 if date >= td(17apr2008)

gen unjust_enrichment = 0
replace unjust_enrichment = 1 if date >= td(17apr2014)

*****
*** 4. Matching and extraction
*****

* Matches numerics n (nn/nn/nnnn or nn/nn/nn) also with "-". Unresolved cases do exist.

*Extracted pay dates
gen work_date1 = regexs(0) if regexm(deposit_from, "[0-9]?[0-9]\/[0-9]?[0-9]\/[0-9]?[0-9]?[0-9][0-9]")

gen work_date2 = regexs(0) if regexm(deposit_from, "[0-9]?[0-9]-[0-9]?[0-9]-[0-9]?[0-9]?[0-9][0-9]")

* Matches nn/nn
gen work_date3 = regexs(0) if regexm(deposit_from, "[0-9]*[0-9]\/[0-9]*[0-9]") & work_date1 == ""

* Extracted year, month, and day to get work date
split work_date1, parse(/) gen(e1_)
split work_date2, parse(-) gen(e2_)

rename (e1_1 e1_2 e1_3 e2_1 e2_2 e2_3) (e1_month e1_day e1_year e2_month e2_day e2_year)

gen e_year = e1_year + e2_year
gen e_month = e1_month + e2_month
gen e_day = e1_day + e2_day
gen year_l2 = substr(year_str,-2,2)
gen e_year_l2 = substr(e_year,-2,2)
replace e_year = "20" + e_year_l2
drop e_year_l2 year_l2

destring e_year e_month e_day, replace
gen work_date = mdy(e_month,e_day,e_year)
format work_date %td

```

```

* Counts of various characters (intermediate variables used in later cleaning)

* Parentheses
gen nleftp = length(deposit_from) - length(subinstr(deposit_from, "(", "", .))
gen nrightp = length(deposit_from) - length(subinstr(deposit_from, ")", "", .))
gen number_paren = nleftp + nrightp

* Comma
gen number_comma = length(deposit_from) - length(subinstr(deposit_from, ",", "", .))

* Ampersand
gen number_amp = length(deposit_from) - length(subinstr(deposit_from, "&", "", .))

* Asterisk
gen number_ast = length(deposit_from) - length(subinstr(deposit_from, "*", "", .))

* Forward slash
gen number_fws = length(deposit_from) - length(subinstr(deposit_from, "/", "", .))

* Hyphen
gen number_hyp = length(deposit_from) - length(subinstr(deposit_from, "-", "", .))

* Length of memo
gen memo_length = strlen(deposit_from)

* Has unit?
gen unit_flag = strpos(lower(deposit_from), "unit") > 0

* Has some variant of "1st shift"
gen first_flag = strpos(lower(deposit_from), "1st shift") > 0
replace first_flag = 1 if strpos(lower(deposit_from), "1st shft") > 0
replace first_flag = 1 if strpos(lower(deposit_from), "1 st shft") > 0
replace first_flag = 1 if strpos(lower(deposit_from), "1st.shft") > 0

* Has some variant of "2nd shift"/"3rd shift"/"night shift"
gen snd_flag = strpos(lower(deposit_from), "2nd shift") > 0
replace snd_flag = 1 if strpos(lower(deposit_from), "2nd shft") > 0
replace snd_flag = 1 if strpos(lower(deposit_from), "2ndshift") > 0
replace snd_flag = 1 if (strpos(lower(deposit_from), "3rd shif") > 0 & amount <= 4)
replace snd_flag = 1 if (strpos(lower(deposit_from), "3rd shft") > 0 & amount <= 4)

```

```

replace snd_flag = 1 if (strpos(lower(deposit_from), "third shift") > 0 & amount <= 4)
replace snd_flag = 1 if strpos(lower(deposit_from), "night shift") > 0
replace snd_flag = 1 if strpos(lower(deposit_from), "nightshift") > 0

```

```

* Has number
gen num_flag = regexm(deposit_from, "[0-9]")

```

```

* Four shifts
gen four_day = strpos(lower(deposit_from), "fri-mon") > 0
replace four_day = 1 if strpos(lower(deposit_from), "sat-tue") > 0

```

```

* Three shifts
gen three_day = strpos(lower(deposit_from), "mon-wed") > 0
replace three_day = 1 if strpos(lower(deposit_from), "wed-fri") > 0
replace three_day = 1 if strpos(lower(deposit_from), "fri-sun") > 0
replace three_day = 1 if strpos(lower(deposit_from), "sat-mon") > 0
replace three_day = 1 if strpos(lower(deposit_from), "saturday-monday") > 0

```

```

* Two shifts
gen two_day = strpos(lower(deposit_from), "mon-tue") > 0
replace two_day = 1 if strpos(lower(deposit_from), "tue-wed") > 0
replace two_day = 1 if strpos(lower(deposit_from), "tues-wed") > 0
replace two_day = 1 if strpos(lower(deposit_from), "wed-thu") > 0
replace two_day = 1 if strpos(lower(deposit_from), "thurs-fri") > 0
replace two_day = 1 if strpos(lower(deposit_from), "sat-s") > 0
replace two_day = 1 if strpos(lower(deposit_from), "sun-mon") > 0

```

```

* Count number of integers observed in deposit_from memo
gen memo_copy = deposit_from
forval j = 0 / 9 {
    replace memo_copy = subinstr(memo_copy, "`j'", "", .)
}

```

```

gen number_int = strlen(deposit_from) - strlen(memo_copy)

```

```

* Identify problematic entries (if extracted dates are more than a month apart)
gen issue = 0
gen between = abs(date-work_date)
replace issue = 1 if between > 31

```

```

* Set estimation sample (at this point in the code we are only considering entries with $1, 2, 3, or 4 paid. We consider entri

```

```

gen total_sample = 0
replace total_sample = 1 if (!mi(work_date)) & (issue == 0) & (amount == 4 | amount == 3 | amount == 2 | amount == 1)

* Assume one shift worked per pay observation as a baseline
gen shifts = 0
replace shifts = 1 if total_sample == 1

** Clean problematic entries. Each cleaning 'section' represents the cleaning of entries that share some sort of similar chara

* Check that initial sample has 115,793 unusable entries out of 945,108 (12.25%)
count if total_sample == 0
assert r(N) == 115793

* First Section: Include all entries paid at $1 as a single shift
replace total_sample = 1 if amount == 1
replace shifts = 1 if amount == 1

tab total_sample
count if total_sample == 0
assert r(N) == 106466
* Cuts unusable entries to 106,466 (11.26%)

* Second Section: Force all entries with either "1st shift" or "2nd shift"/"3rd shift"/"night shift" as one shift
gen shift_memo = 0
replace shift_memo = 1 if (total_sample == 0) & (first_flag == 1 | snd_flag == 1)
replace total_sample = 1 if shift_memo == 1
replace shifts = 1 if shift_memo == 1

tab total_sample
count if total_sample == 0
assert r(N) == 97086
* Cuts unusable entries to 97,086

* Third Section: Simple shift measurement via ampersand count based on manual review of data
generate two_amp = 0
replace two_amp = 1 if (total_sample == 0) & (amount == 2) & (number_amp == 1)
replace total_sample = 1 if two_amp == 1
replace shifts = 2 if two_amp == 1

generate three_amp = 0
replace three_amp = 1 if (total_sample == 0) & (amount == 3) & (number_amp == 1)

```

```

replace three_amp = 1 if (total_sample == 0) & (amount == 3) & (number_amp == 2)
replace total_sample = 1 if three_amp == 1
replace shifts = 3 if three_amp == 1

generate four_amp = 0
replace four_amp = 1 if (total_sample == 0) & (amount == 4) & (number_amp == 1)
replace four_amp = 1 if (total_sample == 0) & (amount == 4) & (number_amp == 2)
replace total_sample = 1 if four_amp == 1
replace shifts = 2 if four_amp == 1
replace shifts = 3 if (four_amp == 1) & (deposit_from == "08-9,14,15 Pod Porter &Dusting")
replace shifts = 4 if (four_amp == 1) & (shifts != 3) & (number_comm >= 2) & (deposit_from != "Aug20&23, 2010 Friday,Monday Un
replace shifts = 4 if (four_amp == 1) & (number_amp == 2)

* Fourth Section: Simple shift measurement via asterisk count based on manual review of data
generate two_ast = 0
replace two_ast = 1 if (total_sample == 0) & (amount == 2) & (number_ast > 0)
replace two_ast = 1 if (total_sample == 0) & (amount == 3) & (number_ast == 1) & (number_comm == 1)
replace two_ast = 1 if (total_sample == 0) & (amount == 3) & (number_ast == 2)
replace two_ast = 1 if (total_sample == 0) & (amount == 4) & (number_ast == 1)
replace two_ast = 1 if (total_sample == 0) & (amount == 4) & (number_ast == 3)
replace total_sample = 1 if two_ast == 1
replace shifts = 2 if two_ast == 1
replace shifts = 3 if (two_ast == 1) & (amount == 3) & (number_ast == 2)
replace shifts = 4 if (two_ast == 1) & (amount == 4) & (number_ast == 3)

tab total_sample
count if total_sample == 0
assert r(N) == 92763
* Sections three and four cut unusable entries to 92,763

* Fifth Section: Entries with specific date ranges referenced
gen date_range = 0
replace date_range = 1 if (total_sample == 0) & (four_day == 1 | three_day == 1 | two_day == 1)
replace total_sample = 1 if date_range == 1
replace shifts = 4 if four_day == 1
replace shifts = 3 if three_day == 1
replace shifts = 2 if two_day == 1

tab total_sample
count if total_sample == 0
assert r(N) == 90078

```

```

* Cuts unusable entries to 90,078

* Sixth Section: Include entries where deposit_from == 1
replace total_sample = 1 if deposit_from == "1"
replace shifts = 1 if deposit_from == "1"

* Seventh Section: Various memo length work. Most with memo_length == 3 into 1 shift
replace total_sample = 1 if (total_sample == 0) & (memo_length == 3) & (deposit_from != "SEG")
replace shifts = 1 if (total_sample == 1) & (memo_length == 3) & (deposit_from != "SEG")

* Most with memo_length == 4 into 1 shift
replace total_sample = 1 if (total_sample == 0) & (memo_length == 4) & (amount == 4 | amount == 3 | amount == 2 | amount == 1)
replace shifts = 1 if (total_sample == 1) & (memo_length == 4) & (amount == 4 | amount == 3 | amount == 2 | amount == 1)

* All with memo_length == 5 and 6 into 1 shift
replace total_sample = 1 if (total_sample == 0) & (memo_length == 5 | memo_length == 6)
replace shifts = 1 if (total_sample == 1) & (memo_length == 5 | memo_length == 6)

tab total_sample
count if total_sample == 0
assert r(N) == 86048
* Sections six and seven cut unusable entries to 86,048

* Eighth Section: All with 8 parentheses have four shifts
generate eight_paren = 0
replace eight_paren = 1 if (total_sample == 0) & (number_paren == 8)
replace total_sample = 1 if eight_paren == 1
replace shifts = 4 if eight_paren == 1

* Ninth Section: High number of commas
generate sixt_comma = 0
replace sixt_comma = 1 if (total_sample == 0) & (number_comm == 16)
replace total_sample = 1 if sixt_comma == 1
replace shifts = 18 if (sixt_comma == 1) & (amount == 36)
replace shifts = 19 if (sixt_comma == 1) & (amount == 38)
replace shifts = 17 if (sixt_comma == 1) & (amount == 51)

generate fift_comma = 0
replace fift_comma = 1 if (total_sample == 0) & (number_comm == 15)
replace total_sample = 1 if fift_comma == 1
replace shifts = 16 if fift_comma == 1

```

```

generate fourt_comma = 0
replace fourt_comma = 1 if (total_sample == 0) & (number_comm == 14)
replace total_sample = 1 if fourt_comma == 1
replace shifts = 15 if fourt_comma == 1

generate thirt_comma = 0
replace thirt_comma = 1 if (total_sample == 0) & (number_comm == 13)
replace total_sample = 1 if thirt_comma == 1
replace shifts = 15 if (thirt_comma == 1) & (amount == 30 | amount == 32)
replace shifts = 14 if (thirt_comma == 1) & (shifts == 0)

generate twelf_comma = 0
replace twelf_comma = 1 if (total_sample == 0) & (number_comm == 12)
replace total_sample = 1 if twelf_comma == 1
replace shifts = 13 if (twelf_comma == 1) & (amount == 26 | amount == 52)
replace shifts = 14 if (twelf_comma == 1) & (amount == 14 | amount == 28)
replace shifts = 15 if (twelf_comma == 1) & (amount == 28 & number_hyp == 4)

* Tenth Section: Account for poor date records using various fixes
* Between greater than 365 & amount in (1, 2)
gen bet_low = 0
replace bet_low = 1 if (total_sample == 0) & (between > 365 & !mi(between)) & (amount == 2 | amount == 3)
replace total_sample = 1 if bet_low == 1
replace shifts = 1 if bet_low == 1

tab total_sample
count if total_sample == 0
assert r(N) == 84391
* Sections eight through ten cut unusable entries to 84,391

* Eleventh Section: Special case 1 (one shift)
gen spec_cas1 = 0
* Amount of 2, no asterisks, contains "Unit"
replace spec_cas1 = 1 if (total_sample == 0) & (amount == 2) & (number_ast == 0) & (unit_flag == 1)
* Amount of 2, two hyphens, no slashes; amount of 2, two slashes, no hyphens (one shift)
replace spec_cas1 = 1 if (total_sample == 0) & (amount == 2) & (number_hyp == 2 & number_fws == 0)
replace spec_cas1 = 1 if (total_sample == 0) & (amount == 2) & (number_hyp == 0 & number_fws == 2)
* Amount of 2, 3, or 4; no numbers in deposit_from
replace spec_cas1 = 1 if (total_sample == 0) & (num_flag == 0) & (amount == 2 | amount == 3 | amount == 4)
* Amount of 3, one comma

```



```

replace spec_case1 = 1 if (total_sample == 0) & (amount == 3) & (number_comm == 1)
replace total_sample = 1 if spec_case1 == 1
replace shifts = 1 if spec_case1 == 1

tab total_sample
count if total_sample == 0
assert r(N) == 68766
* Cuts unusable entries to 68,766

* Twelfth Section: Special case 2 (two shifts)
gen spec_case2 = 0
* Amount of 2, 4, 6, or 8; 1 comma; contains "unit"; zero or multiple hypens
replace spec_case2 = 1 if (total_sample == 0) & (amount == 2 | amount == 4 | amount == 6 | amount == 8) & (number_comm == 1) &
* Amount of 2, three hyphens; amount of 2, two hyphens, one slash
replace spec_case2 = 1 if (total_sample == 0) & (amount == 2) & (number_hyp == 2) & (number_fws == 1)
* Amount of 6, > 0 hyphen, no comma, no slash
replace spec_case2 = 1 if (total_sample == 0) & (amount == 6) & (number_hyp > 0) & (number_comm == 0) & (number_fws == 0)
* Amount of 4 or 6, asterisk
replace spec_case2 = 1 if (total_sample == 0) & (amount == 4 | 6) & (number_ast > 0)
* Amount of 4, one comma
replace spec_case2 = 1 if (amount == 4) & (number_comm == 1)
replace total_sample = 1 if spec_case2 == 1
replace shifts = 2 if spec_case2 == 1

tab total_sample
count if total_sample == 0
assert r(N) == 62221
* Cuts unusable entries to 62,221

* Thirteenth Section: Special case 3 (three shifts)
gen spec_case3 = 0
* Three distinct days of pay
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "1-3/") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "2-4/") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "/3-5") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "/4-6") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "5-7") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "/6-8") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "7-9") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "8-20") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "8-30") > 0

```

```

replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "9-21") > 0
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "9-31") > 0
* Amount of 3, 2 fwd slashes, one hyphen
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3) & (number_fws == 2) & (number_hyp == 1)
* Amount of 3, 2 fwd slashes, > 0 asterisks
replace spec_case3 = 1 if (total_sample == 0) & (amount == 3) & (number_fws == 2) & (number_ast > 0)
* Amount of 3, two commas
replace spec_case2 = 1 if (total_sample == 0) & (amount == 3) & (number_comm == 2)
replace total_sample = 1 if spec_case3 == 1
replace shifts = 3 if spec_case3 == 1

tab total_sample
count if total_sample == 0
assert r(N) == 59455
* Cuts unusable entries to 59,455

* Fourteenth Section (four shifts)
gen spec_case4 = 0
* Four distinct days of pay
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "1-4") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "/2-5/") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & strpos(lower(deposit_from), "3-6") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & strpos(lower(deposit_from), "4-7") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "5-8") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "6-9") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "7-10") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "8-11") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "9-12") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "10-13") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & strpos(lower(deposit_from), "7-20") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4) & strpos(lower(deposit_from), "7-20/") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & strpos(lower(deposit_from), "7-30") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "8-21") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "8-31") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "9-22") > 0
replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "0-23") > 0
* Amount of 8, one asterisk
replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & (number_ast > 0)
* Amount of 4, three or four commas
replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & (number_comm == 3 | number_comm == 4)
replace total_sample = 1 if spec_case4 == 1

```

```
replace shifts = 4 if spec_case4 == 1

tab total_sample
count if total_sample == 0
assert r(N) == 56055
* Cuts unusable entries to 56,055

* save out
save "`output'\pay_data_processed.dta", replace

log close
```

Attachment H-2

STATA Log File for Data Preparation

```

-----
      name:  <unnamed>
      log:   [PATH]\data_preparation.log
log type:  text
opened on: 16 Dec 2021, 16:20:18

.
.
.
. local input "[PATH]"

.
. local output "[PATH]"

.
.
.
. cd `output'
[PATH]

.
.
.
. *****

.
. *** 2. Import pay data

.
. *****

.
.
.
. *Dec. 2008

.

```

```
. import excel "`input'\VWP Participants - Dec. 2008.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 2,165 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2008_1.dta", replace
file `output'\VWP_2008_1.dta saved

.

. clear

.

.

.

. *2009

.

. import excel "`input'\VWP Participants - 2009.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 81,979 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2009_1.dta", replace
file `output'\VWP_2009_1.dta saved

.

. clear

.

.

.
```

```

. import excel "`input'\VWP Participants - 2009.xlsx", sheet("Sheet3") clear
(7 vars, 6,156 obs)

.

. rename (A B C D E F G) (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2009_2.dta", replace
file `output'\VWP_2009_2.dta saved

.

. clear

.

.

.

. *2010

.

. import excel "`input'\VWP Participants - 2010.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 75,347 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2010_1.dta", replace
file `output'\VWP_2010_1.dta saved

.

. clear

.

.

.

. *2011

.

```

```
. import excel "`input'\VWP Participants - 2011.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 65,733 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2011_1.dta", replace
file `output'\VWP_2011_1.dta saved

.

. clear

.

.

.

. *2012

.

. import excel "`input'\VWP Participants - 2012.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 61,005 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2012_1.dta", replace
file `output'\VWP_2012_1.dta saved

.

. clear

.

.

.
```

```

. import excel "`input'\VWP Participants - 2012.xlsx", sheet("Sheet3") clear
(7 vars, 5,641 obs)

.

. rename (A B C D E F G) (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2012_2.dta", replace
file `output'\VWP_2012_2.dta saved

.

. clear

.

.

.

. *2013

.

. import excel "`input'\VWP Participants - 2013.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 67,289 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2013_1.dta", replace
file `output'\VWP_2013_1.dta saved

.

. clear

.

.

.

. *2014

.

```



```

. import excel "`input'\VWP Participants - 2014.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 75,746 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2014_1.dta", replace
file `output'\VWP_2014_1.dta saved

.

. clear

.

.

.

. *2015

.

. import excel "`input'\VWP Participants - 2015.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 74,629 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2015_1.dta", replace
file `output'\VWP_2015_1.dta saved

.

. clear

.

.

.

```

```

. import excel "`input'\VWP Participants - 2015.xlsx", sheet("Sheet3") clear
(7 vars, 7,104 obs)

.

. rename (A B C D E F G) (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2012_2.dta", replace
file `output'\VWP_2012_2.dta saved

.

. clear

.

.

.

. *2016

.

. import excel "`input'\VWP Participants - 2016.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 80,282 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2016_1.dta", replace
file `output'\VWP_2016_1.dta saved

.

. clear

.

.

.

. *2017

.

```

```

. import excel "`input'\VWP Participants - 2017.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 88,645 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2017_1.dta", replace
file `output'\VWP_2017_1.dta saved

.

. clear

.

.

.

. *2018 (jan.-sept.)

.

. import excel "`input'\VWP Participants - Jan.-Sept. 2018.xlsx", sheet("Sheet1") firstrow clear
(7 vars, 54,401 obs)

.

. rename *, lower

.

. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.

. save "`output'\VWP_2018_1.dta", replace
file `output'\VWP_2018_1.dta saved

.

. clear

.

.

.

```

```

. * CCBVA0000106554 (2018-2019)

.
. import excel "`input'\CCBVA0000106554.xlsx", sheet("Sheet 1") firstrow clear
(10 vars, 204,627 obs)

.
. rename *, lower

.
. rename transaction_date date

.
. drop facility reversed billing_agency

.
. rename * (agency_num detainee_name receipt_num deposit_from amount description date)

.
. gen date2 = dofc(date)

.
. format date2 %td

.
. drop date

.
. rename date2 date

.
. save "`output'\2019_1.dta", replace
file `output'\2019_1.dta saved

.
. clear

.
.
.
. *****

```

```

.
. *** 2. Append data

.
. *****

.
.
.
. use "`output'\VWP_2008_1.dta"

.
. append using "`output'\VWP_2009_1.dta"
(variable amount was byte, now double to accommodate using data's values)
(variable description was str25, now str34 to accommodate using data's values)

.
. append using "`output'\VWP_2009_2.dta"

.
. append using "`output'\VWP_2010_1.dta"

.
. append using "`output'\VWP_2011_1.dta"

.
. append using "`output'\VWP_2012_1.dta"

.
. append using "`output'\VWP_2012_2.dta"

.
. append using "`output'\VWP_2013_1.dta"
(variable receipt_num was str8, now str9 to accommodate using data's values)

.
. append using "`output'\VWP_2014_1.dta"

.
. append using "`output'\VWP_2015_1.dta"

```

```
(variable detainee_name was str31, now str32 to accommodate using data's values)
```

```
.
. append using "`output'\VWP_2016_1.dta"
(variable deposit_from was str35, now str43 to accommodate using data's values)
```

```
.
. append using "`output'\VWP_2017_1.dta"
```

```
.
. append using "`output'\VWP_2018_1.dta"
```

```
.
. append using "`output'\2019_1.dta"
(variable agency_num was str9, now str15 to accommodate using data's values)
(variable deposit_from was str43, now str89 to accommodate using data's values)
```

```
.
. save "`output'\full_pay_data.dta", replace
file `output'\full_pay_data.dta saved
```

```
.
.
.
. *****
```

```
.
. *** 3. Initial data preparation
```

```
.
. *****
```

```
.
.
.
. use "`output'\full_pay_data.dta", replace
```

```
.
. gen year = year(date)
```

```
.
```

```

. gen year_str = string(year)

.
. gen month = month(date)

.
. gen month_str = string(month)

.
. gen day = day(date)

.
. gen day_str = string(day)

.
.
.
. * Generate class indicators

.
. gen forced_labor = 0

.
. replace forced_labor = 1 if date >= td(17apr2008)
(945,108 real changes made)

.
.
.
. gen unjust_enrichment = 0

.
. replace unjust_enrichment = 1 if date >= td(17apr2014)
(565,907 real changes made)

.
.
.
. *****
.
.

```

```

. *** 4. Matching and extraction

.
. *****
.
.
.
. * Matches numerics n (nn/nn/nnnn or nn/nn/nn) also with "-". Unresolved cases do exist.
.
.
.
. *Extracted pay dates

.
. gen work_date1 = regexs(0) if regexm(deposit_from, "[0-9]?[0-9]\/[0-9]?[0-9]\/[0-9]?[0-9]?[0-9][0-9]")
(414,833 missing values generated)

.
.
.
. gen work_date2 = regexs(0) if regexm(deposit_from, "[0-9]?[0-9]-[0-9]?[0-9]-[0-9]?[0-9]?[0-9][0-9]")
(629,403 missing values generated)

.
.
.
. * Matches nn/nn

.
. gen work_date3 = regexs(0) if regexm(deposit_from, "[0-9]*[0-9]\/[0-9]*[0-9]") & work_date1 == ""
(887,863 missing values generated)

.
.
.
. * Extracted year, month, and day to get work date

.
. split work_date1, parse(/) gen(e1_)

```


variables created as string:

e1_1 e1_2 e1_3

.

. split work_date2, parse(-) gen(e2_)

variables created as string:

e2_1 e2_2 e2_3

.

.

.

. rename (e1_1 e1_2 e1_3 e2_1 e2_2 e2_3) (e1_month e1_day e1_year e2_month e2_day e2_year)

.

.

.

. gen e_year = e1_year + e2_year

(99,135 missing values generated)

.

. gen e_month = e1_month + e2_month

(99,135 missing values generated)

.

. gen e_day = e1_day + e2_day

(99,135 missing values generated)

.

. gen year_12 = substr(year_str,-2,2)

.

. gen e_year_12 = substr(e_year,-2,2)

(99,135 missing values generated)

.

. replace e_year = "20" + e_year_12

(650,463 real changes made)

```

.
. drop e_year_l2 year_l2

.
.
.
. destring e_year e_month e_day, replace
e_year: all characters numeric; replaced as int
e_month: all characters numeric; replaced as int
(99135 missing values generated)
e_day: all characters numeric; replaced as int
(99135 missing values generated)

.
. gen work_date = mdy(e_month,e_day,e_year)
(99,826 missing values generated)

.
. format work_date %td

.
.
.
. * Counts of various characters (intermediate variables used in later cleaning)

.
.
.
. * Parentheses

.
. gen nleftp = length(deposit_from) - length(subinstr(deposit_from, "(", "", .))

.
. gen nrightp = length(deposit_from) - length(subinstr(deposit_from, ")", "", .))

```

```
.  
. gen number_paren = nleftp + nrightp  
  
.   
.   
.   
. * Comma  
  
.   
. gen number_comm = length(deposit_from) - length(subinstr(deposit_from, ",", "", .))  
  
.   
.   
.   
. * Ampersand  
  
.   
. gen number_amp = length(deposit_from) - length(subinstr(deposit_from, "&", "", .))  
  
.   
.   
.   
. * Asterisk  
  
.   
. gen number_ast = length(deposit_from) - length(subinstr(deposit_from, "*", "", .))  
  
.   
.   
.   
. * Forward slash  
  
.   
. gen number_fws = length(deposit_from) - length(subinstr(deposit_from, "/", "", .))  
  
. 
```

```

.
.
. * Hyphen

.
. gen number_hyp = length(deposit_from) - length(subinstr(deposit_from, "-", "", .))

.
.
.
. * Length of memo

.
. gen memo_length = strlen(deposit_from)

.
.
.
. * Has unit?

.
. gen unit_flag = strpos(lower(deposit_from), "unit") > 0

.
.
.
. * Has some variant of "1st shift"?

.
. gen first_flag = strpos(lower(deposit_from), "1st shift") > 0

.
. replace first_flag = 1 if strpos(lower(deposit_from), "1st shft") > 0
(1,301 real changes made)

.

```

```

. replace first_flag = 1 if strpos(lower(deposit_from), "1 st shft") > 0
(0 real changes made)

.

. replace first_flag = 1 if strpos(lower(deposit_from), "1st.shft") > 0
(0 real changes made)

.

.

. * Has some variant of "2nd shift"/"3rd shift"/"night shift"?

.

. gen snd_flag = strpos(lower(deposit_from), "2nd shift") > 0

.

. replace snd_flag = 1 if strpos(lower(deposit_from), "2nd shft") > 0
(1,103 real changes made)

.

. replace snd_flag = 1 if strpos(lower(deposit_from), "2ndshift") > 0
(152 real changes made)

.

. replace snd_flag = 1 if (strpos(lower(deposit_from), "3rd shif") > 0 & amount <= 4)
(10,548 real changes made)

.

. replace snd_flag = 1 if (strpos(lower(deposit_from), "3rd shft") > 0 & amount <= 4)
(374 real changes made)

.

. replace snd_flag = 1 if (strpos(lower(deposit_from), "third shift") > 0 & amount <= 4)
(58 real changes made)

.

```

```
. replace snd_flag = 1 if strpos(lower(deposit_from), "night shift") > 0  
(209 real changes made)
```

```
.  
. replace snd_flag = 1 if strpos(lower(deposit_from), "nightshift") > 0  
(351 real changes made)
```

```
.  
.   
.   
. * Has number?
```

```
.  
. gen num_flag = regexm(deposit_from, "[0-9]")
```

```
.  
.   
.   
. * Four shifts?
```

```
.  
. gen four_day = strpos(lower(deposit_from), "fri-mon") > 0
```

```
.  
. replace four_day = 1 if strpos(lower(deposit_from), "sat-tue") > 0  
(225 real changes made)
```

```
.  
.   
.   
. * Three shifts?
```

```
.  
. gen three_day = strpos(lower(deposit_from), "mon-wed") > 0
```

```
.
```

```

. replace three_day = 1 if strpos(lower(deposit_from), "wed-fri") > 0
(85 real changes made)

.

. replace three_day = 1 if strpos(lower(deposit_from), "fri-sun") > 0
(17 real changes made)

.

. replace three_day = 1 if strpos(lower(deposit_from), "sat-mon") > 0
(1,036 real changes made)

.

. replace three_day = 1 if strpos(lower(deposit_from), "saturday-monday") > 0
(30 real changes made)

.

.

.

. * Two shifts?

.

. gen two_day = strpos(lower(deposit_from), "mon-tue") > 0

.

. replace two_day = 1 if strpos(lower(deposit_from), "tue-wed") > 0
(1 real change made)

.

. replace two_day = 1 if strpos(lower(deposit_from), "tues-wed") > 0
(269 real changes made)

.

. replace two_day = 1 if strpos(lower(deposit_from), "wed-thu") > 0
(291 real changes made)

.

```

```

. replace two_day = 1 if strpos(lower(deposit_from), "thurs-fri") > 0
(250 real changes made)

.

. replace two_day = 1 if strpos(lower(deposit_from), "sat-s") > 0
(26 real changes made)

.

. replace two_day = 1 if strpos(lower(deposit_from), "sun-mon") > 0
(43 real changes made)

.

.

. * Count number of integers observed in deposit_from memo

.

. gen memo_copy = deposit_from
(5,260 missing values generated)

.

. forval j = 0 / 9 {
                                2
. replace memo_copy = subinstr(memo_copy, "`j'", "", .)
                                3
. }
(635,515 real changes made)
(868,376 real changes made)
(710,349 real changes made)
(299,487 real changes made)
(237,732 real changes made)
(254,686 real changes made)
(247,973 real changes made)
(242,285 real changes made)
(234,828 real changes made)
(301,879 real changes made)

```



```

.
.
.
. gen number_int = strlen(deposit_from) - strlen(memo_copy)

.
.
.
. * Identify problematic entries (if extracted dates are more than a month apart)

.
. gen issue = 0

.
. gen between = abs(date-work_date)
(99,826 missing values generated)

.
. replace issue = 1 if between > 31
(105,969 real changes made)

.
.
.
. * Set estimation sample (at this point in the code we are only considering entries with $1, 2, 3, or 4 paid. We consider ent
> ith higher paid amounts later on)

.
. gen total_sample = 0

.
. replace total_sample = 1 if (!mi(work_date)) & (issue == 0) & (amount == 4 | amount == 3 | amount == 2 | amount == 1)
(829,315 real changes made)

.

```

```

.
.
. * Assume one shift worked per pay observation as a baseline

.

. gen shifts = 0

.

. replace shifts = 1 if total_sample == 1
(829,315 real changes made)

.
.
.
. ** Clean problematic entries. Each cleaning 'Section' represents the cleaning of entries that share some sort of similar cha
> tic

.
.
.
. * Check that initial sample has 115,793 unusable entries out of 945,108 (12.25%)

.
. count if total_sample == 0
      115,793

.

. assert r(N) == 115793

.
.
.
. * First Section: Include all entries paid at $1 as a single shift

.

. replace total_sample = 1 if amount == 1

```

(9,327 real changes made)

.
 . replace shifts = 1 if amount == 1

(9,327 real changes made)

.
 .
 .
 . tab total_sample

total_sampl e	Freq.	Percent	Cum.
0	106,466	11.26	11.26
1	838,642	88.74	100.00
Total	945,108	100.00	

.
 . count if total_sample == 0
 106,466

.
 . assert r(N) == 106466

.
 . * Cuts unusable entries to 106,466 (11.26%)

.
 .
 .
 . * Second Section: Force all entries with either "1st shift" or "2nd shift"/"3rd shift"/"night shift" as one shift

.
 . gen shift_memo = 0

```
.
. replace shift_memo = 1 if (total_sample == 0) & (first_flag == 1 | snd_flag == 1)
(9,380 real changes made)
```

```
.
. replace total_sample = 1 if shift_memo == 1
(9,380 real changes made)
```

```
.
. replace shifts = 1 if shift_memo == 1
(9,380 real changes made)
```

```
.
.
.
. tab total_sample
```

total_sampl e	Freq.	Percent	Cum.
0	97,086	10.27	10.27
1	848,022	89.73	100.00
Total	945,108	100.00	

```
.
. count if total_sample == 0
          97,086
```

```
.
. assert r(N) == 97086
```

```
.
. * Cuts unusable entries to 97,086
```

```
.  
.   
.   
. * Third Section: Simple shift measurement via ampersand count based on manual review of data  
  
.   
. generate two_amp = 0  
  
.   
. replace two_amp = 1 if (total_sample == 0) & (amount == 2) & (number_amp == 1)  
(627 real changes made)  
  
.   
. replace total_sample = 1 if two_amp == 1  
(627 real changes made)  
  
.   
. replace shifts = 2 if two_amp == 1  
(627 real changes made)  
  
.   
.   
.   
. generate three_amp = 0  
  
.   
. replace three_amp = 1 if (total_sample == 0) & (amount == 3) & (number_amp == 1)  
(192 real changes made)  
  
.   
. replace three_amp = 1 if (total_sample == 0) & (amount == 3) & (number_amp == 2)  
(0 real changes made)  
  
.   
. replace total_sample = 1 if three_amp == 1  
(192 real changes made)
```

```

.
. replace shifts = 3 if three_amp == 1
(192 real changes made)

.
.
.
. generate four_amp = 0

.
. replace four_amp = 1 if (total_sample == 0 ) & (amount == 4) & (number_amp == 1)
(1,184 real changes made)

.
. replace four_amp = 1 if (total_sample == 0) & (amount == 4) & (number_amp == 2)
(6 real changes made)

.
. replace total_sample = 1 if four_amp == 1
(1,190 real changes made)

.
. replace shifts = 2 if four_amp == 1
(1,190 real changes made)

.
. replace shifts = 3 if (four_amp == 1) & (deposit_from == "08-9,14,15 Pod Porter &Dusting")
(1 real change made)

.
. replace shifts = 4 if (four_amp == 1) & (shifts != 3) & (number_comm >= 2) & (deposit_from != "Aug20&23, 2010 Friday,Monday
> ")
(19 real changes made)

.

```

```

. replace shifts = 4 if (four_amp == 1) & (number_amp == 2)
(6 real changes made)

.
.
.
. * Fourth Section: Simple shift measurement via asterisk count based on manual review of data

.
. generate two_ast = 0

.
. replace two_ast = 1 if (total_sample == 0) & (amount == 2) & (number_ast > 0)
(1,105 real changes made)

.
. replace two_ast = 1 if (total_sample == 0) & (amount == 3) & (number_ast == 1) & (number_comm == 1)
(1 real change made)

.
. replace two_ast = 1 if (total_sample == 0) & (amount == 3) & (number_ast == 2)
(27 real changes made)

.
. replace two_ast = 1 if (total_sample == 0) & (amount == 4) & (number_ast == 1)
(1,176 real changes made)

.
. replace two_ast = 1 if (total_sample == 0) & (amount == 4) & (number_ast == 3)
(5 real changes made)

.
. replace total_sample = 1 if two_ast == 1
(2,314 real changes made)

.

```

```

. replace shifts = 2 if two_ast == 1
(2,314 real changes made)

.

. replace shifts = 3 if (two_ast == 1) & (amount == 3) & (number_ast == 2)
(27 real changes made)

.

. replace shifts = 4 if (two_ast == 1) & (amount == 4) & (number_ast == 3)
(5 real changes made)

.

.

. tab total_sample

```

total_sampl e	Freq.	Percent	Cum.
0	92,763	9.82	9.82
1	852,345	90.18	100.00
Total	945,108	100.00	

```

.

. count if total_sample == 0
          92,763

.

. assert r(N) == 92763

.

. * Sections three and four cut unusable entries to 92,763

.

.

```



```

.
. * Fifth Section: Entries with specific date ranges referenced

.
. gen date_range = 0

.
. replace date_range = 1 if (total_sample == 0) & (four_day == 1 | three_day == 1 | two_day == 1)
(2,685 real changes made)

.
. replace total_sample = 1 if date_range == 1
(2,685 real changes made)

.
. replace shifts = 4 if four_day == 1
(716 real changes made)

.
. replace shifts = 3 if three_day == 1
(1,171 real changes made)

.
. replace shifts = 2 if two_day == 1
(828 real changes made)

.
.
.
. tab total_sample

```

total_sampl e	Freq.	Percent	Cum.
0	90,078	9.53	9.53
1	855,030	90.47	100.00

```
-----+-----
Total |      945,108      100.00
```

```
.
. count if total_sample == 0
                        90,078

.
. assert r(N) == 90078

.
. * Cuts unusable entries to 90,078

.
.
.
. * Sixth Section: Include entries where deposit_from == 1

.
. replace total_sample = 1 if deposit_from == "1"
(8 real changes made)

.
. replace shifts = 1 if deposit_from == "1"
(8 real changes made)

.
.
.
. * Seventh Section: Various memo length work. Most with memo_length == 3 into 1 shift

.
. replace total_sample = 1 if (total_sample == 0) & (memo_length == 3) & (deposit_from != "SEG")
(208 real changes made)

.
```

```
. replace shifts = 1 if (total_sample == 1) & (memo_length == 3) & (deposit_from != "SEG")
(208 real changes made)
```

```
.
.
.
```

```
. * Most with memo_length == 4 into 1 shift
```

```
.
```

```
. replace total_sample = 1 if (total_sample == 0) & (memo_length == 4) & (amount == 4 | amount == 3 | amount == 2 | amount ==
(2,047 real changes made)
```

```
.
```

```
. replace shifts = 1 if (total_sample == 1) & (memo_length == 4) & (amount == 4 | amount == 3 | amount == 2 | amount == 1)
(2,047 real changes made)
```

```
.
.
.
```

```
. * All with memo_length == 5 and 6 into 1 shift
```

```
.
```

```
. replace total_sample = 1 if (total_sample == 0) & (memo_length == 5 | memo_length == 6)
(1,767 real changes made)
```

```
.
```

```
. replace shifts = 1 if (total_sample == 1) & (memo_length == 5 | memo_length == 6)
(1,767 real changes made)
```

```
.
.
.
```

```
. tab total_sample
```

```
total_sampl |
             e |      Freq.      Percent      Cum.
```

-----+-----			
0	86,048	9.10	9.10
1	859,060	90.90	100.00
-----+-----			
Total	945,108	100.00	

```

.
. count if total_sample == 0
.           86,048

.
. assert r(N) == 86048

.
. * Sections six and seven cut unusable entries to 86,048

.
.
.
. * Eighth Section: All with 8 parentheses have four shifts

.
. generate eight_paren = 0

.
. replace eight_paren = 1 if (total_sample == 0) & (number_paren == 8)
(3 real changes made)

.
. replace total_sample = 1 if eight_paren == 1
(3 real changes made)

.
. replace shifts = 4 if eight_paren == 1
(3 real changes made)

```

```
.  
.   
.   
. * Ninth Section: High number of commas  
  
.   
. generate sixt_comma = 0  
  
.   
. replace sixt_comma = 1 if (total_sample == 0) & (number_comm == 16)  
(4 real changes made)  
  
.   
. replace total_sample = 1 if sixt_comma == 1  
(4 real changes made)  
  
.   
. replace shifts = 18 if (sixt_comma == 1) & (amount == 36)  
(2 real changes made)  
  
.   
. replace shifts = 19 if (sixt_comma == 1) & (amount == 38)  
(1 real change made)  
  
.   
. replace shifts = 17 if (sixt_comma == 1) & (amount == 51)  
(1 real change made)  
  
.   
.   
.   
. generate fift_comma = 0  
  
.   
. replace fift_comma = 1 if (total_sample == 0) & (number_comm == 15)  
(1 real change made)
```

```
.  
. replace total_sample = 1 if fift_comma == 1  
(1 real change made)  
  
.   
. replace shifts = 16 if fift_comma == 1  
(1 real change made)  
  
.   
.   
.   
. generate fourt_comma = 0  
  
.   
. replace fourt_comma = 1 if (total_sample == 0) & (number_comm == 14)  
(1 real change made)  
  
.   
. replace total_sample = 1 if fourt_comma == 1  
(1 real change made)  
  
.   
. replace shifts = 15 if fourt_comma == 1  
(1 real change made)  
  
.   
.   
.   
. generate thirt_comma = 0  
  
.   
. replace thirt_comma = 1 if (total_sample == 0) & (number_comm == 13)  
(4 real changes made)  
  
. 
```

```
. replace total_sample = 1 if thirt_comma == 1
(4 real changes made)
```

```
.
. replace shifts = 15 if (thirt_comma == 1) & (amount == 30 | amount == 32)
(2 real changes made)
```

```
.
. replace shifts = 14 if (thirt_comma == 1) & (shifts == 0)
(2 real changes made)
```

```
.
.
.
. generate twelf_comma = 0
```

```
.
. replace twelf_comma = 1 if (total_sample == 0) & (number_comm == 12)
(9 real changes made)
```

```
.
. replace total_sample = 1 if twelf_comma == 1
(9 real changes made)
```

```
.
. replace shifts = 13 if (twelf_comma == 1) & (amount == 26 | amount == 52)
(5 real changes made)
```

```
.
. replace shifts = 14 if (twelf_comma == 1) & (amount == 14 | amount == 28)
(4 real changes made)
```

```
.
. replace shifts = 15 if (twelf_comma == 1) & (amount == 28 & number_hyp == 4)
(1 real change made)
```

```

.
.
.
. * Tenth Section: Account for poor date records using various fixes

.
. * Between greater than 365 & amount in (1, 2)

.
. gen bet_low = 0

.
. replace bet_low = 1 if (total_sample == 0) & (between > 365 & !mi(between)) & (amount == 2 | amount == 3)
(1,635 real changes made)

.
. replace total_sample = 1 if bet_low == 1
(1,635 real changes made)

.
. replace shifts = 1 if bet_low == 1
(1,635 real changes made)

.
.
.
. tab total_sample

```

total_sampl e	Freq.	Percent	Cum.
0	84,391	8.93	8.93
1	860,717	91.07	100.00
Total	945,108	100.00	


```

.
. count if total_sample == 0
      84,391

.

. assert r(N) == 84391

.

. * Sections eight through ten cut unusable entries to 84,391

.
.
.
. * Eleventh Section: Special case 1 (one shift)

.

. gen spec_case1 = 0

.

. * Amount of 2, no asterisks, contains "Unit"

.

. replace spec_case1 = 1 if (total_sample == 0) & (amount == 2) & (number_ast == 0) & (unit_flag == 1)
(5,254 real changes made)

.

. * Amount of 2, two hyphens, no slashes; amount of 2, two slashes, no hyphens (one shift)

.

. replace spec_case1 = 1 if (total_sample == 0) & (amount == 2) & (number_hyp == 2 & number_fws == 0)
(144 real changes made)

.

. replace spec_case1 = 1 if (total_sample == 0) & (amount == 2) & (number_hyp == 0 & number_fws == 2)
(550 real changes made)

```

```

.
. * Amount of 2, 3, or 4; no numbers in deposit_from

.
. replace spec_case1 = 1 if (total_sample == 0) & (num_flag == 0) & (amount == 2 | amount == 3 | amount == 4)
(9,023 real changes made)

.
. * Amount of 3, one comma

.
. replace spec_case1 = 1 if (total_sample == 0) & (amount == 3) & (number_comm == 1)
(654 real changes made)

.
. replace total_sample = 1 if spec_case1 == 1
(15,625 real changes made)

.
. replace shifts = 1 if spec_case1 == 1
(15,625 real changes made)

.
.
.
. tab total_sample

```

total_sampl e	Freq.	Percent	Cum.
0	68,766	7.28	7.28
1	876,342	92.72	100.00
Total	945,108	100.00	

```

. count if total_sample == 0
      68,766

.

. assert r(N) == 68766

.

. * Cuts unusable entries to 68,766

.

.

. * Twelfth Section: Special case 2 (two shifts)

.

. gen spec_case2 = 0

.

. * Amount of 2, 4, 6, or 8; 1 comma; contains "unit"; zero or multiple hypens

.

. replace spec_case2 = 1 if (total_sample == 0) & (amount == 2 | amount == 4 | amount == 6 | amount == 8) & (number_comm == 1)
> it_flag == 1) & (number_hyp != 1)
(1,090 real changes made)

.

. * Amount of 2, three hyphens; amount of 2, two hyphens, one slash

.

. replace spec_case2 = 1 if (total_sample == 0) & (amount == 2) & (number_hyp == 2) & (number_fws == 1)
(73 real changes made)

.

. * Amount of 6, > 0 hyphen, no comma, no slash

.

```

```
. replace spec_case2 = 1 if (total_sample == 0) & (amount == 6) & (number_hyp > 0) & (number_comm == 0) & (number_fws == 0)
(1,442 real changes made)
```

```
.
```

```
. * Amount of 4 or 6, asterisk
```

```
.
```

```
. replace spec_case2 = 1 if (total_sample == 0) & (amount == 4 | 6) & (number_ast > 0)
(241 real changes made)
```

```
.
```

```
. * Amount of 4, one comma
```

```
.
```

```
. replace spec_case2 = 1 if (amount == 4) & (number_comm == 1)
(5,536 real changes made)
```

```
.
```

```
. replace total_sample = 1 if spec_case2 == 1
(6,545 real changes made)
```

```
.
```

```
. replace shifts = 2 if spec_case2 == 1
(7,692 real changes made)
```

```
.
```

```
.
```

```
.
```

```
. tab total_sample
```

total_sampl e	Freq.	Percent	Cum.
0	62,221	6.58	6.58
1	882,887	93.42	100.00

Total	945,108	100.00
-------	---------	--------

```
.
. count if total_sample == 0
                        62,221

.
. assert r(N) == 62221

.
. * Cuts unusable entries to 62,221

.
.
.
. * Thirteenth Section: Special case 3 (three shifts)

.
. gen spec_case3 = 0

.
. * Three distinct days of pay

.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "1-3/") > 0
(243 real changes made)

.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "2-4/") > 0
(66 real changes made)

.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "/3-5") > 0
(92 real changes made)

.
```

```
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "/4-6") > 0
(183 real changes made)
```

```
.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "5-7") > 0
(124 real changes made)
```

```
.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "/6-8") > 0
(72 real changes made)
```

```
.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "7-9") > 0
(140 real changes made)
```

```
.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "8-20") > 0
(184 real changes made)
```

```
.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "8-30") > 0
(137 real changes made)
```

```
.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "9-21") > 0
(124 real changes made)
```

```
.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3 | amount == 6) & strpos(lower(deposit_from), "9-31") > 0
(145 real changes made)
```

```
.
. * Amount of 3, 2 fwd slashes, one hyphen
```

```
.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3) & (number_fws == 2) & (number_hyp == 1)
```

(1,256 real changes made)

```
.
. * Amount of 3, 2 fwd slashes, > 0 asterisks

.
. replace spec_case3 = 1 if (total_sample == 0) & (amount == 3) & (number_fws == 2) & (number_ast > 0)
(0 real changes made)

.
. * Amount of 3, two commas

.
. replace spec_case2 = 1 if (total_sample == 0) & (amount == 3) & (number_comm == 2)
(752 real changes made)

.
. replace total_sample = 1 if spec_case3 == 1
(2,766 real changes made)

.
. replace shifts = 3 if spec_case3 == 1
(2,766 real changes made)

.
.
.
. tab total_sample
```

total_sampl e	Freq.	Percent	Cum.
0	59,455	6.29	6.29
1	885,653	93.71	100.00
Total	945,108	100.00	

```

.
. count if total_sample == 0
      59,455

.
. assert r(N) == 59455

.
. * Cuts unusable entries to 59,455

.
.
.
. * Fourteenth Section (four shifts)

.
. gen spec_case4 = 0

.
. * Four distinct days of pay

.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "1-4") > 0
(155 real changes made)

.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "/2-5/") > 0
(73 real changes made)

.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & strpos(lower(deposit_from), "3-6") > 0
(45 real changes made)

.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & strpos(lower(deposit_from), "4-7") > 0

```


(118 real changes made)

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "5-8") > 0
(110 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "6-9") > 0
(154 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "7-10") > 0
(111 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "8-11") > 0
(126 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "9-12") > 0
(93 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "10-13") > 0
(89 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & strpos(lower(deposit_from), "7-20") > 0
(64 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4) & strpos(lower(deposit_from), "7-20/") > 0
(17 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & strpos(lower(deposit_from), "7-30") > 0
```

(46 real changes made)

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "8-21") > 0
(225 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "8-31") > 0
(173 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "9-22") > 0
(122 real changes made)
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 4 | amount == 8) & strpos(lower(deposit_from), "0-23") > 0
(142 real changes made)
```

```
.
. * Amount of 8, one asterisk
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & (number_ast > 0)
(0 real changes made)
```

```
.
. * Amount of 4, three or four commas
```

```
.
. replace spec_case4 = 1 if (total_sample == 0) & (amount == 8) & (number_comm == 3 | number_comm == 4)
(1,537 real changes made)
```

```
.
. replace total_sample = 1 if spec_case4 == 1
(3,400 real changes made)
```

```
.
. replace shifts = 4 if spec_case4 == 1
(3,400 real changes made)
```

```
.
.
.
. tab total_sample
```

total_sampl e	Freq.	Percent	Cum.
0	56,055	5.93	5.93
1	889,053	94.07	100.00
Total	945,108	100.00	

```
.
. count if total_sample == 0
56,055
```

```
.
. assert r(N) == 56055
```

```
.
. * Cuts unusable entries to 56,055
```

```
.
.
.
. * save out
```

```
.
. save "`output'\pay_data_processed.dta", replace
file `output'\pay_data_processed.dta saved
```

```
.  
.   
.   
. log close  
    name: <unnamed>  
    log: `output'\logs\data_preparation.log  
    log type: text  
closed on: 16 Dec 2021, 16:23:38  
-----
```

Attachment H-3

STATA Code for Counts

```

* (c) 2021 Intensity LLC

** Purpose: Output counts for attachments to expert report.

*****
*** 1. Setup
*****

clear matrix
clear mata
clear
set maxvar 32767
set matsize 11000
set more off, perm
set type double, perm
pause on

log using "[PATH]\logs\data_counts.log", replace

local input "[PATH]"
local output "[PATH]"

cd `output'

*****
*** 2. Import and examine distributions
*****

use "`output'\pay_data_processed.dta"

keep agency_num detainee_name deposit_from amount date year_str month_str forced_labor unjust_enrichment total_sample shifts

* Breakdown of usable vs. non-usable entries by class and year
tab2 total_sample forced_labor unjust_enrichment, firstonly
tab total_sample year if forced_labor == 1
tab total_sample year if unjust_enrichment == 1

```

```

drop if total_sample == 0
drop total_sample

* Add variable related to DOL wage change
gen post_dol = date>td(24jul2009)

* Indicators for different comparison wage periods ("cwp")
gen cwp_one = date<td(24jul2009)
gen cwp_two = date>td(24jul2009) & date<td(20nov2011)
gen cwp_three = date>td(20nov2011) & date<td(22sep2013)
gen cwp_four = date>td(22sep2013) & date<td(22sep2014)
gen cwp_five = date>td(22sep2014) & date<td(02mar2017)
gen cwp_six = date>td(02mar2017) & date<td(01aug2018)
gen cwp_seven = date>td(01aug2018) & date<td(01aug2019)
gen cwp_eight = date>td(01aug2019) & date<td(01aug2020)
gen cwp_nine = date>td(01aug2020)
** Note: coding for cwp_eight differs from other periods to account for data quirks

* Unjust enrichment period begins in the middle of cwp_four
gen cwp_four_ue = cwp_four == 1 & unjust_enrichment == 1

* Generate cwp_year combos
gen cwp_one_08 = cwp_one == 1 & year_str == "2008"
gen cwp_one_09 = cwp_one == 1 & year_str == "2009"

gen cwp_two_09 = cwp_two == 1 & year_str == "2009"
gen cwp_two_10 = cwp_two == 1 & year_str == "2010"
gen cwp_two_11 = cwp_two == 1 & year_str == "2011"

gen cwp_three_11 = cwp_three == 1 & year_str == "2011"
gen cwp_three_12 = cwp_three == 1 & year_str == "2012"
gen cwp_three_13 = cwp_three == 1 & year_str == "2013"

gen cwp_four_13 = cwp_four == 1 & year_str == "2013"
gen cwp_four_14 = cwp_four == 1 & year_str == "2014"

gen cwp_five_14 = cwp_five == 1 & year_str == "2014"
gen cwp_five_15 = cwp_five == 1 & year_str == "2015"
gen cwp_five_16 = cwp_five == 1 & year_str == "2016"
gen cwp_five_17 = cwp_five == 1 & year_str == "2017"

```

```

gen cwp_six_17 = cwp_six == 1 & year_str == "2017"
gen cwp_six_18 = cwp_six == 1 & year_str == "2018"

gen cwp_seven_18 = cwp_seven == 1 & year_str == "2018"
gen cwp_seven_19 = cwp_seven == 1 & year_str == "2019"

gen cwp_eight_19 = cwp_eight == 1 & year_str == "2019"
gen cwp_eight_20 = cwp_eight == 1 & year_str == "2020"

gen cwp_nine_20 = cwp_nine == 1 & year_str == "2020"

egen anycombocwp = rowtotal(cwp_one_* cwp_two_* cwp_three_* cwp_four_13 cwp_four_14 cwp_five_* cwp_six_* cwp_seven_* cwp_eight
assert anycombocwp ==1
drop anycombocwp

* Check that all observations have precisely one CWP (excluding cwp_four_ue & cwp_five_mw)
egen any_cwp = rowtotal(cwp_one cwp_two cwp_three cwp_four cwp_five cwp_six cwp_seven cwp_eight cwp_nine)
sum any_cwp
assert r(mean) == 1

* Start & end date by class
codebook date if forced_labor == 1
codebook date if unjust_enrichment == 1

* Unique detained individuals
codebook agency_num if forced_labor == 1
codebook agency_num if unjust_enrichment == 1

* Breakdown of number of shifts performed by class
tab shifts if post_dol == 0 & forced_labor == 1
tab shifts if post_dol == 1 & forced_labor == 1
tab shifts year if post_dol == 0 & forced_labor == 1
tab shifts year if post_dol == 1 & forced_labor == 1

tab shifts if post_dol == 0 & unjust_enrichment == 1
tab shifts if post_dol == 1 & unjust_enrichment == 1
tab shifts year if post_dol == 0 & unjust_enrichment == 1
tab shifts year if post_dol == 1 & unjust_enrichment == 1

* Sum all wages by class
sum amount if forced_labor == 1 & post_dol == 0

```

```

display r(sum)
sum amount if forced_labor == 1 & post_dol == 1
display r(sum)

sum amount if unjust_enrichment == 1 & post_dol == 0
display r(sum)
sum amount if unjust_enrichment == 1 & post_dol == 1
display r(sum)

* Sum all wages by cwp
sum amount if cwp_one == 1
display r(sum)
sum amount if cwp_two == 1
display r(sum)
sum amount if cwp_three == 1
display r(sum)
sum amount if cwp_four == 1
display r(sum)
sum amount if cwp_five == 1
display r(sum)
sum amount if cwp_six == 1
display r(sum)
sum amount if cwp_seven == 1
display r(sum)
sum amount if cwp_seven == 1
display r(sum)
sum amount if cwp_eight == 1
display r(sum)
sum amount if cwp_nine == 1
display r(sum)
sum amount if cwp_four_ue == 1
display r(sum)

* Sum all wages by cwp and year for those CWP with EO annual changes
sum amount if cwp_five_14 == 1
display r(sum)
sum amount if cwp_five_15 == 1
display r(sum)
sum amount if cwp_five_16 == 1
display r(sum)
sum amount if cwp_five_17 == 1

```



```

display r(sum)
sum amount if cwp_six_17 == 1
display r(sum)
sum amount if cwp_six_18 == 1
display r(sum)
sum amount if cwp_seven_18 == 1
display r(sum)
sum amount if cwp_seven_19 == 1
display r(sum)
sum amount if cwp_eight_19 == 1
display r(sum)
sum amount if cwp_eight_20 == 1
display r(sum)

```

```

sort year post_dol unjust_enrichment
by year post_dol unjust_enrichment: egen yearly_wages = total(amount)

```

```

tab yearly_wages year_str if post_dol == 0 & forced_labor == 1
tab yearly_wages year_str if post_dol == 0 & unjust_enrichment == 1

```

```

tab yearly_wages year_str if post_dol == 1 & forced_labor == 1
tab yearly_wages year_str if post_dol == 1 & unjust_enrichment == 1

```

```

*****

```

```

*** 3. Identify occupations performed

```

```

*****

```

```

* Identify role performed by detained worker. Replace certain values such that each entry pertains to a single job

```

```

gen porter_flag = strpos(lower(deposit_from), "porter") > 0
replace porter_flag = 1 if strpos(lower(deposit_from), "sally") > 0
replace porter_flag = 1 if strpos(lower(deposit_from), "pod") > 0

```

```

gen janitor_flag = strpos(lower(deposit_from), "janitor") > 0
replace janitor_flag = 1 if strpos(lower(deposit_from), "trash") > 0
replace janitor_flag = 1 if strpos(lower(deposit_from), "grounds") > 0
replace janitor_flag = 0 if porter_flag == 1

```

```

gen laundry_flag = strpos(lower(deposit_from), "laund") > 0
replace laundry_flag = 0 if janitor_flag == 1
replace laundry_flag = 0 if porter_flag == 1

```

```

gen barber_flag = strpos(lower(deposit_from), "barber") > 0
replace barber_flag = 0 if janitor_flag == 1
replace barber_flag = 0 if porter_flag == 1

gen shower_flag = strpos(lower(deposit_from), "shower") > 0
replace shower_flag = 0 if janitor_flag == 1
replace shower_flag = 0 if porter_flag == 1
replace shower_flag = 0 if barber_flag == 1

gen commis_flag = strpos(lower(deposit_from), "commissary") > 0
replace commis_flag = 0 if janitor_flag == 1
replace commis_flag = 0 if porter_flag == 1

gen medical_flag = strpos(lower(deposit_from), "medical") > 0
replace medical_flag = 0 if janitor_flag == 1
replace medical_flag = 0 if porter_flag == 1

gen kitchen_flag = strpos(lower(deposit_from), "kit") > 0
replace kitchen_flag = 0 if janitor_flag == 1
replace kitchen_flag = 0 if porter_flag == 1
replace kitchen_flag = 0 if shower_flag == 1

egen any_job_id = rowtotal(porter_flag janitor_flag laundry_flag barber_flag shower_flag commis_flag medical_flag kitchen_flag)
gen no_job = any_job_id == 0
drop any_job_id

*****
*** 4. Examine distribution of jobs identified
*****

table no_job
* 380,429 entries have no job identified

* Forced labor class
tab1 porter_flag-kitchen_flag

* Unjust enrichment class
tab2 unjust_enrichment porter_flag-kitchen_flag, firstonly

** Number of shifts associated with each job performed during a given CWP

```

```

* Associate shift count with job performed
foreach x of varlist porter_flag-no_job {
    gen shift_`x' = shifts*`x'
}

*****
** CW Anaylsis Shift Counts

** FL class (CW analysis)
preserve

collapse (sum) shift_*, by(cwp_one-cwp_nine)
reshape long shift_, i(cwp*) j(job) string

gen cwp = 1 if cwp_one == 1
replace cwp = 2 if cwp_two == 1
replace cwp = 3 if cwp_three == 1
replace cwp = 4 if cwp_four == 1
replace cwp = 5 if cwp_five == 1
replace cwp = 6 if cwp_six == 1
replace cwp = 7 if cwp_seven == 1
replace cwp = 8 if cwp_eight == 1
replace cwp = 9 if cwp_nine == 1
assert cwp != .

drop cwp_*

replace job = substr(job, "_flag", "", .)

reshape wide shift_, i(job) j(cwp)
rename shift_* shift_cwp*

* FL CLASS SHIFT COUNTS (CW analysis)
list, ab(33) sep(0)

restore

* UE class (CW analysis)
preserve

```

```

keep if unjust_enrichment==1

assert cwp_four == cwp_four_ue
drop cwp_four_ue

collapse (sum) shift_*, by(cwp_four-cwp_nine)

reshape long shift_, i(cwp*) j(job) string

gen cwp = 4 if cwp_four == 1
replace cwp = 5 if cwp_five == 1
replace cwp = 6 if cwp_six == 1
replace cwp = 7 if cwp_seven == 1
replace cwp = 8 if cwp_eight == 1
replace cwp = 9 if cwp_nine == 1
assert cwp != .

drop cwp_*

replace job = substr(job, "_flag", "", .)

reshape wide shift_, i(job) j(cwp)
rename shift_* shift_cwp*

* UE CLASS SHIFT COUNTS (CW analysis)
list, ab(33) sep(0)

restore

*****
** EO Anaylsis Shift Counts (for CWP's affected by EO annual changes)
preserve

* CWP FIVE_14 TO EIGHT_20 (EO analysis)

collapse (sum) shift_*, by(cwp_five_14-cwp_eight_20)
reshape long shift_, i(cwp*) j(job) string

gen cwp = "cwp_five_14" if cwp_five_14 == 1
replace cwp = "cwp_five_15" if cwp_five_15 == 1
replace cwp = "cwp_five_16" if cwp_five_16 == 1

```

```

replace cwp = "cwp_five_17" if cwp_five_17 == 1
replace cwp = "cwp_six_17" if cwp_six_17 == 1
replace cwp = "cwp_six_18" if cwp_six_18 == 1
replace cwp = "cwp_seven_18" if cwp_seven_18 == 1
replace cwp = "cwp_seven_19" if cwp_seven_19 == 1
replace cwp = "cwp_eight_19" if cwp_eight_19 == 1
replace cwp = "cwp_eight_20" if cwp_eight_20 == 1

* Eliminate shift counts for other CWP & year combos
drop if missing(cwp)

drop cwp_*

replace job = substr(job, "_flag", "", .)

reshape wide shift_, i(job) j(cwp) string

* CWP FIVE_14 THROUGH EIGHT_20 SHIFT COUNTS (EO analysis)
list, ab(33) sep(0)

restore

* FINAL CWP IS CONTIGUOUS WITH CWP NINE

* save out
save "`output'\counts_data.dta", replace

log close

```

Attachment H-4

STATA Log File for Counts

```

-----
      name:  <unnamed>
      log:   `output'\logs\data_counts.log
log type:  text
opened on: 20 Dec 2021, 08:52:40

.
.
.
. local input "[PATH]"

.
. local output "[PATH]"

.
.
.
. cd `output'
`output'

.
.
.
. *****

.
. *** 2. Import and examine distributions

.
. *****

.
.
.
. use "`output'\pay_data_processed.dta"

.

```

```

.
.
. keep agency_num detainee_name deposit_from amount date year_str month_str forced_labor unjust_enrichment total_sample shifts
.
.
.
. * Breakdown of usable vs. non-usable entries by class and year
.
. tab2 total_sample forced_labor unjust_enrichment, firstonly

```

```
-> tabulation of total_sample by forced_labor
```

	forced_lab	
total_samp	or	
le	1	Total
0	56,055	56,055
1	889,053	889,053
Total	945,108	945,108

```
-> tabulation of total_sample by unjust_enrichment
```

total_samp	unjust_enrichment	
le	0	1
		Total
0	21,779	34,276
1	357,422	531,631
Total	379,201	565,907

```

.
. tab total_sample year if forced_labor == 1

```

total_samp		year_str										
le	2008	2009	2010	2011	2012	2013	2014	2015	2016		Total	
0	63	2,439	4,159	5,079	5,069	4,723	705	784	1,088		56,055	
1	2,102	85,696	71,188	60,654	55,936	62,566	75,041	80,949	79,194		889,053	

Total	2,165	88,135	75,347	65,733	61,005	67,289	75,746	81,733	80,282	945,108
-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	---------

total_sample	year_str				Total
	2017	2018	2019	2020	
0	2,386	9,654	12,583	7,323	56,055
1	86,259	73,079	87,080	69,309	889,053
Total	88,645	82,733	99,663	76,632	945,108

```
.
. tab total_sample year if unjust_enrichment == 1
```

total_sample	year_str							Total
	2014	2015	2016	2017	2018	2019	2020	
0	458	784	1,088	2,386	9,654	12,583	7,323	34,276
1	55,761	80,949	79,194	86,259	73,079	87,080	69,309	531,631
Total	56,219	81,733	80,282	88,645	82,733	99,663	76,632	565,907

```
.
.
.
. drop if total_sample == 0
(56,055 observations deleted)

.
. drop total_sample

.
.
.
. * Add variable related to DOL wage change

.
. gen post_dol = date>td(24jul2009)

.
```



```

.
.
. * Indicators for different comparison wage periods ("cwp")
.
. gen cwp_one = date<td(24jul2009)
.
. gen cwp_two = date>td(24jul2009) & date<td(20nov2011)
.
. gen cwp_three = date>td(20nov2011) & date<td(22sep2013)
.
. gen cwp_four = date>td(22sep2013) & date<td(22sep2014)
.
. gen cwp_five = date>td(22sep2014) & date<td(02mar2017)
.
. gen cwp_six = date>td(02mar2017) & date<td(01aug2018)
.
. gen cwp_seven = date>td(01aug2018) & date<td(01aug2019)
.
. gen cwp_eight = date>=td(01aug2019) & date<td(01aug2020)
.
. gen cwp_nine = date>td(01aug2020)
.
. ** Note: coding for cwp_eight differs from other periods to account for data quirks
.
.
. * Unjust enrichment period begins in the middle of cwp_four
.
. gen cwp_four_ue = cwp_four == 1 & unjust_enrichment == 1

```

```
.  
.   
.   
. * Generate cwp_year combos  
  
.   
. gen cwp_one_08 = cwp_one == 1 & year_str == "2008"  
  
.   
. gen cwp_one_09 = cwp_one == 1 & year_str == "2009"  
  
.   
.   
.   
. gen cwp_two_09 = cwp_two == 1 & year_str == "2009"  
  
.   
. gen cwp_two_10 = cwp_two == 1 & year_str == "2010"  
  
.   
. gen cwp_two_11 = cwp_two == 1 & year_str == "2011"  
  
.   
.   
.   
. gen cwp_three_11 = cwp_three == 1 & year_str == "2011"  
  
.   
. gen cwp_three_12 = cwp_three == 1 & year_str == "2012"  
  
.   
. gen cwp_three_13 = cwp_three == 1 & year_str == "2013"  
  
.   
.   
.   
. gen cwp_four_13 = cwp_four == 1 & year_str == "2013"  
  
.   
. gen cwp_four_14 = cwp_four == 1 & year_str == "2014"
```

```
.  
.   
.   
. gen cwp_five_14 = cwp_five == 1 & year_str == "2014"  
  
.   
. gen cwp_five_15 = cwp_five == 1 & year_str == "2015"  
  
.   
. gen cwp_five_16 = cwp_five == 1 & year_str == "2016"  
  
.   
. gen cwp_five_17 = cwp_five == 1 & year_str == "2017"  
  
.   
.   
.   
. gen cwp_six_17 = cwp_six == 1 & year_str == "2017"  
  
.   
. gen cwp_six_18 = cwp_six == 1 & year_str == "2018"  
  
.   
.   
.   
. gen cwp_seven_18 = cwp_seven == 1 & year_str == "2018"  
  
.   
. gen cwp_seven_19 = cwp_seven == 1 & year_str == "2019"  
  
.   
.   
.   
. gen cwp_eight_19 = cwp_eight == 1 & year_str == "2019"  
  
.   
. gen cwp_eight_20 = cwp_eight == 1 & year_str == "2020"  
  
.   
. 
```

```

.
. gen cwp_nine_20 = cwp_nine == 1 & year_str == "2020"
.
.
.
. egen anycombocwp = rowtotal(cwp_one_* cwp_two_* cwp_three_* cwp_four_13 cwp_four_14 cwp_five_* cwp_six_* cwp_seven_* cwp_eig
> wp_nine_*)

.
. assert anycombocwp ==1

.
. drop anycombocwp

.
.
.
. * Check that all observations have precisely one CWP (excluding cwp_four_ue & cwp_five_mw)

.
. egen any_cwp = rowtotal(cwp_one cwp_two cwp_three cwp_four cwp_five cwp_six cwp_seven cwp_eight cwp_nine)

.
. sum any_cwp

```

Variable	Obs	Mean	Std. dev.	Min	Max
any_cwp	889,053	1	0	1	1

```

.
. assert r(mean) == 1

.
.
.
. * Start & end date by class

.
. codebook date if forced_labor == 1

```

date

Type: Numeric daily date (double)

Range: [17889.628,22272] Units: 1.000e-06
Or equivalently: [23dec2008,23dec2020] Units: days
Unique values: 122,796 Missing .: 0/889,053

Mean: 20137.1 = 18feb2015(+ 4 hours)
Std. dev.: 1278.5
Percentiles: 10% 25% 50% 75% 90%
 18268.5 19011.4 20269.4 21220.3 21839
 06jan2010 19jan2012 30jun2015 05feb2018 17oct2019

.
. codebook date if unjust_enrichment == 1

date

Type: Numeric daily date (double)

Range: [19830.347,22272] Units: 1.000e-06
Or equivalently: [17apr2014,23dec2020] Units: days
Unique values: 90,509 Missing .: 0/531,631

Mean: 21041.3 = 10aug2017(+ 7 hours)
Std. dev.: 689.519
Percentiles: 10% 25% 50% 75% 90%
 20075.4 20437.5 21018.7 21656 21976
 18dec2014 15dec2015 18jul2017 17apr2019 02mar2020

.
.
.
. * Unique detained individuals
.

```
. codebook agency_num if forced_labor == 1
```

```
-----
agency_num                                                                 AG
-----
```

```
      Type: String (str15)
```

```
Unique values: 32,103
```

```
Missing "": 0/889,053
```

```
Examples: "205131823"
```

```
          "208440897"
```

```
          "215975146   "
```

```
          "79488542"
```

```
Warning: Variable has trailing blanks.
```

```
.
. codebook agency_num if unjust_enrichment == 1
```

```
-----
agency_num                                                                 AG
-----
```

```
      Type: String (str15)
```

```
Unique values: 13,719
```

```
Missing "": 0/531,631
```

```
Examples: "204402339"
```

```
          "208284181"
```

```
          "209840081"
```

```
          "216372595"
```

```
Warning: Variable has trailing blanks.
```

```
.
.
.
. * Breakdown of number of shifts performed by class
```

```
.
```

```
. tab shifts if post_dol == 0 & forced_labor == 1
```

shifts	Freq.	Percent	Cum.
1	48,112	99.15	99.15
2	377	0.78	99.93
3	15	0.03	99.96
4	21	0.04	100.00
Total	48,525	100.00	

```
.
. tab shifts if post_dol == 1 & forced_labor == 1
```

shifts	Freq.	Percent	Cum.
1	820,237	97.59	97.59
2	12,216	1.45	99.04
3	4,137	0.49	99.53
4	3,919	0.47	100.00
13	5	0.00	100.00
14	5	0.00	100.00
15	4	0.00	100.00
16	1	0.00	100.00
17	1	0.00	100.00
18	2	0.00	100.00
19	1	0.00	100.00
Total	840,528	100.00	

```
.
. tab shifts year if post_dol == 0 & forced_labor == 1
```

shifts	year_str		Total
	2008	2009	
1	2,088	46,024	48,112
2	14	363	377
3	0	15	15
4	0	21	21

Total | 2,102 46,423 | 48,525

.
 . tab shifts year if post_dol == 1 & forced_labor == 1

		year_str									
shifts		2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
1		38,595	68,490	55,788	52,995	61,697	74,973	80,810	79,004	85,876	820,237
2		632	1,592	2,482	1,084	371	47	70	138	331	12,216
3		15	543	1,641	1,137	424	8	20	7	15	4,137
4		31	563	743	720	74	13	49	45	37	3,919
13		0	0	0	0	0	0	0	0	0	5
14		0	0	0	0	0	0	0	0	0	5
15		0	0	0	0	0	0	0	0	0	4
16		0	0	0	0	0	0	0	0	0	1
17		0	0	0	0	0	0	0	0	0	1
18		0	0	0	0	0	0	0	0	0	2
19		0	0	0	0	0	0	0	0	0	1
Total		39,273	71,188	60,654	55,936	62,566	75,041	80,949	79,194	86,259	840,528

		year_str			
shifts		2018	2019	2020	Total
1		70,822	83,740	67,447	820,237
2		1,766	2,464	1,239	12,216
3		59	64	204	4,137
4		431	801	412	3,919
13		0	4	1	5
14		1	0	4	5
15		0	2	2	4
16		0	1	0	1
17		0	1	0	1
18		0	2	0	2
19		0	1	0	1
Total		73,079	87,080	69,309	840,528


```
.
.
. tab shifts if post_dol == 0 & unjust_enrichment == 1
no observations
```

```
.
. tab shifts if post_dol == 1 & unjust_enrichment == 1
```

shifts	Freq.	Percent	Cum.
-----+-----			
1	523,419	98.46	98.46
2	6,036	1.14	99.59
3	372	0.07	99.66
4	1,785	0.34	100.00
13	5	0.00	100.00
14	5	0.00	100.00
15	4	0.00	100.00
16	1	0.00	100.00
17	1	0.00	100.00
18	2	0.00	100.00
19	1	0.00	100.00
-----+-----			
Total	531,631	100.00	

```
.
. tab shifts year if post_dol == 0 & unjust_enrichment == 1
no observations
```

```
.
. tab shifts year if post_dol == 1 & unjust_enrichment == 1
```

shifts	year_str							Total
shifts	2014	2015	2016	2017	2018	2019	2020	
-----+-----								
1	55,720	80,810	79,004	85,876	70,822	83,740	67,447	523,419
2	28	70	138	331	1,766	2,464	1,239	6,036
3	3	20	7	15	59	64	204	372
4	10	49	45	37	431	801	412	1,785
13	0	0	0	0	0	4	1	5
14	0	0	0	0	1	0	4	5
15	0	0	0	0	0	2	2	4

16	0	0	0	0	0	1	0	1
17	0	0	0	0	0	1	0	1
18	0	0	0	0	0	2	0	2
19	0	0	0	0	0	1	0	1
-----+-----								
Total	55,761	80,949	79,194	86,259	73,079	87,080	69,309	531,631

```
.
.
.
. * Sum all wages by class

.
. sum amount if forced_labor == 1 & post_dol == 0
```

Variable	Obs	Mean	Std. dev.	Min	Max
-----+-----					
amount	48,525	2.620629	2.246445	-12	24

```
.
. display r(sum)
127166
```

```
.
. sum amount if forced_labor == 1 & post_dol == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
-----+-----					
amount	840,528	2.572619	1.17776	-6	60

```
.
. display r(sum)
2162358
```

```
.
.
.
. sum amount if unjust_enrichment == 1 & post_dol == 0
```

Variable	Obs	Mean	Std. dev.	Min	Max
-----+-----					

```

    amount |          0

.
. display r(sum)
          0

.
. sum amount if unjust_enrichment == 1 & post_dol == 1

    Variable |          Obs          Mean    Std. dev.        Min        Max
-----+-----
    amount |    531,631     2.713373     1.2516         -4         60

.
. display r(sum)
          1442513

.
.
.
. * Sum all wages by cwp

.
. sum amount if cwp_one == 1

    Variable |          Obs          Mean    Std. dev.        Min        Max
-----+-----
    amount |     48,525     2.620629     2.246445        -12         24

.
. display r(sum)
          127166

.
. sum amount if cwp_two == 1

    Variable |          Obs          Mean    Std. dev.        Min        Max
-----+-----

```

```
amount |      165,008      2.371346      .9535911      -6      18
```

```
.
. display r(sum)
```

```
391291
```

```
.
. sum amount if cwp_three == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	107,359	2.287605	1.023188	-3	16

```
.
. display r(sum)
```

```
245595
```

```
.
. sum amount if cwp_four == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	70,569	2.342247	1.164364	-4	8

```
.
. display r(sum)
```

```
165290
```

```
.
. sum amount if cwp_five == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	197,102	2.439914	1.243684	-4	12

```
.
```

```
. display r(sum)
```

```
480912
```

```
.
```

```
. sum amount if cwp_six == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	109,872	2.531828	1.211543	1	20

```
.
```

```
. display r(sum)
```

```
278177
```

```
.
```

```
. sum amount if cwp_seven == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	82,705	3.062475	1.155445	1	60

```
.
```

```
. display r(sum)
```

```
253282
```

```
.
```

```
. sum amount if cwp_seven == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	82,705	3.062475	1.155445	1	60

```
.
```

```
. display r(sum)
```

```
253282
```

```
.
. sum amount if cwp_eight == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	86,042	3.201123	1.185361	1	52

```
.
. display r(sum)
275431
```

```
.
. sum amount if cwp_nine == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	21,871	3.309405	.9992969	1	28

```
.
. display r(sum)
72380
```

```
.
. sum amount if cwp_four_ue == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	34,039	2.418726	1.258135	-1	8

```
.
. display r(sum)
82331
```

```
.
.
.
```

```
. * Sum all wages by cwp and year for those CWP with EO annual changes
```

```
.
. sum amount if cwp_five_14 == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	21,722	2.378142	1.246217	-1	8

```
.
. display r(sum)
```

```
51658
```

```
.
. sum amount if cwp_five_15 == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	80,949	2.423897	1.248038	-4	12

```
.
. display r(sum)
```

```
196212
```

```
.
. sum amount if cwp_five_16 == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	79,194	2.468962	1.243686	1	12

```
.
. display r(sum)
```

```
195527
```

```
.
```

```
. sum amount if cwp_five_17 == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	15,237	2.462099	1.211906	1	10

```
.
. display r(sum)
37515
```

```
.
. sum amount if cwp_six_17 == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	71,022	2.428022	1.15685	1	10

```
.
. display r(sum)
172443
```

```
.
. sum amount if cwp_six_18 == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
amount	38,850	2.721596	1.284122	1	20

```
.
. display r(sum)
105734
```

```
.
. sum amount if cwp_seven_18 == 1
```

Variable	Obs	Mean	Std. dev.	Min	Max
----------	-----	------	-----------	-----	-----


```
-----+-----
      amount |      34,229      2.900961      1.119017      1      60
```

```
.
. display r(sum)
      99297
```

```
.
. sum amount if cwp_seven_19 == 1
```

```
Variable |      Obs      Mean      Std. dev.      Min      Max
-----+-----
      amount |      48,476      3.17652      1.167114      1      36
```

```
.
. display r(sum)
      153985
```

```
.
. sum amount if cwp_eight_19 == 1
```

```
Variable |      Obs      Mean      Std. dev.      Min      Max
-----+-----
      amount |      38,604      3.21705      1.239105      1      52
```

```
.
. display r(sum)
      124191
```

```
.
. sum amount if cwp_eight_20 == 1
```

```
Variable |      Obs      Mean      Std. dev.      Min      Max
-----+-----
      amount |      47,438      3.188161      1.139606      1      32
```

```

.
. display r(sum)
151240

.
.
.
.
.
.
. sort year post_dol unjust_enrichment

.
. by year post_dol unjust_enrichment: egen yearly_wages = total(amount)

.
.
.
. tab yearly_wages year_str if post_dol == 0 & forced_labor == 1

yearly_wag |      year_str
      es |      2008      2009 |      Total
-----+-----+-----
      6033 |      2,102          0 |      2,102
    121133 |          0    46,423 |    46,423
-----+-----+-----
      Total |      2,102    46,423 |    48,525

.
. tab yearly_wages year_str if post_dol == 0 & unjust_enrichment == 1
no observations

.
.
.
. tab yearly_wages year_str if post_dol == 1 & forced_labor == 1

```

yearly_wag es	year_str									Total
	2009	2010	2011	2012	2013	2014	2015	2016	2017	
47385	0	0	0	0	0	19,280	0	0	0	19,280
95664	39,273	0	0	0	0	0	0	0	0	39,273
130066	0	0	0	55,936	0	0	0	0	0	55,936
133989	0	0	0	0	0	55,761	0	0	0	55,761
135956	0	0	0	0	62,566	0	0	0	0	62,566
142045	0	0	60,654	0	0	0	0	0	0	60,654
168729	0	71,188	0	0	0	0	0	0	0	71,188
195527	0	0	0	0	0	0	0	79,194	0	79,194
196212	0	0	0	0	0	0	80,949	0	0	80,949
205031	0	0	0	0	0	0	0	0	0	73,079
209958	0	0	0	0	0	0	0	0	86,259	86,259
223620	0	0	0	0	0	0	0	0	0	69,309
278176	0	0	0	0	0	0	0	0	0	87,080
Total	39,273	71,188	60,654	55,936	62,566	75,041	80,949	79,194	86,259	840,528

yearly_wag es	year_str			Total
	2018	2019	2020	
47385	0	0	0	19,280
95664	0	0	0	39,273
130066	0	0	0	55,936
133989	0	0	0	55,761
135956	0	0	0	62,566
142045	0	0	0	60,654
168729	0	0	0	71,188
195527	0	0	0	79,194
196212	0	0	0	80,949
205031	73,079	0	0	73,079
209958	0	0	0	86,259
223620	0	0	69,309	69,309
278176	0	87,080	0	87,080

```
-----+-----+-----
Total | 73,079 87,080 69,309 | 840,528
```

```
.
. tab yearly_wages year_str if post_dol == 1 & unjust_enrichment == 1
```

yearly_wag	year_str							Total
es	2014	2015	2016	2017	2018	2019	2020	
133989	55,761	0	0	0	0	0	0	55,761
195527	0	0	79,194	0	0	0	0	79,194
196212	0	80,949	0	0	0	0	0	80,949
205031	0	0	0	0	73,079	0	0	73,079
209958	0	0	0	86,259	0	0	0	86,259
223620	0	0	0	0	0	0	69,309	69,309
278176	0	0	0	0	0	87,080	0	87,080
Total	55,761	80,949	79,194	86,259	73,079	87,080	69,309	531,631

```
.
.
.
. *****
```

```
. *** 3. Identify occupations performed
```

```
. *****
```

```
. * Identify role performed by detained worker. Replace certain values such that each entry pertains to a single job
```

```
. gen porter_flag = strpos(lower(deposit_from), "porter") > 0

.
. replace porter_flag = 1 if strpos(lower(deposit_from), "sally") > 0
(20,629 real changes made)

.
. replace porter_flag = 1 if strpos(lower(deposit_from), "pod") > 0
(38,897 real changes made)

.
.
.
. gen janitor_flag = strpos(lower(deposit_from), "janitor") > 0

.
. replace janitor_flag = 1 if strpos(lower(deposit_from), "trash") > 0
(14,755 real changes made)

.
. replace janitor_flag = 1 if strpos(lower(deposit_from), "grounds") > 0
(6 real changes made)

.
. replace janitor_flag = 0 if porter_flag == 1
(4 real changes made)

.
.
.
. gen laundry_flag = strpos(lower(deposit_from), "laund") > 0

.
. replace laundry_flag = 0 if janitor_flag == 1
(0 real changes made)
```

```
.  
. replace laundry_flag = 0 if porter_flag == 1  
(0 real changes made)  
  
.   
.   
.   
. gen barber_flag = strpos(lower(deposit_from), "barber") > 0  
  
.   
. replace barber_flag = 0 if janitor_flag == 1  
(0 real changes made)  
  
.   
. replace barber_flag = 0 if porter_flag == 1  
(7 real changes made)  
  
.   
.   
.   
. gen shower_flag = strpos(lower(deposit_from), "shower") > 0  
  
.   
. replace shower_flag = 0 if janitor_flag == 1  
(0 real changes made)  
  
.   
. replace shower_flag = 0 if porter_flag == 1  
(2,609 real changes made)  
  
.   
. replace shower_flag = 0 if barber_flag == 1  
(1 real change made)  
  
.   
. 
```

```

.
. gen commis_flag = strpos(lower(deposit_from), "commissary") > 0

.
. replace commis_flag = 0 if janitor_flag == 1
(0 real changes made)

.
. replace commis_flag = 0 if porter_flag == 1
(0 real changes made)

.
.
.
. gen medical_flag = strpos(lower(deposit_from), "medical") > 0

.
. replace medical_flag = 0 if janitor_flag == 1
(20 real changes made)

.
. replace medical_flag = 0 if porter_flag == 1
(233 real changes made)

.
.
.
. gen kitchen_flag = strpos(lower(deposit_from), "kit") > 0

.
. replace kitchen_flag = 0 if janitor_flag == 1
(2,939 real changes made)

.
. replace kitchen_flag = 0 if porter_flag == 1
(0 real changes made)

```

```

.
. replace kitchen_flag = 0 if shower_flag == 1
(2 real changes made)

.
.
.
. egen any_job_id = rowtotal(porter_flag janitor_flag laundry_flag barber_flag shower_flag commis_flag medical_flag kitchen_fl

.
. gen no_job = any_job_id == 0

.
. drop any_job_id

.
.
.
. *****

.
. *** 4. Examine distribution of jobs identified

.
. *****

.
.
.
. table no_job

-----
      | Frequency
-----+-----
no_job |

```



```

0      |      508,624
1      |      380,429
Total  |      889,053
-----

```

```

.
. * 380,429 entries have no job identified

```

```

.
.
.
. * Forced labor class

```

```

.
. tab1 porter_flag-kitchen_flag

```

-> tabulation of porter_flag

porter_flag	Freq.	Percent	Cum.
0	804,257	90.46	90.46
1	84,796	9.54	100.00
Total	889,053	100.00	

-> tabulation of janitor_flag

janitor_flg	Freq.	Percent	Cum.
0	874,292	98.34	98.34
1	14,761	1.66	100.00
Total	889,053	100.00	

-> tabulation of laundry_flag

laundry_flg			
g	Freq.	Percent	Cum.
0	870,531	97.92	97.92
1	18,522	2.08	100.00
Total	889,053	100.00	

-> tabulation of barber_flag

barber_flag			
	Freq.	Percent	Cum.
0	882,483	99.26	99.26
1	6,570	0.74	100.00
Total	889,053	100.00	

-> tabulation of shower_flag

shower_flag			
	Freq.	Percent	Cum.
0	833,043	93.70	93.70
1	56,010	6.30	100.00
Total	889,053	100.00	

-> tabulation of commis_flag

commis_flag			
	Freq.	Percent	Cum.
0	873,436	98.24	98.24
1	15,617	1.76	100.00
Total	889,053	100.00	

-> tabulation of medical_flag

medical_flg g	Freq.	Percent	Cum.
0	885,938	99.65	99.65
1	3,115	0.35	100.00
Total	889,053	100.00	

-> tabulation of kitchen_flag

kitchen_flg g	Freq.	Percent	Cum.
0	579,820	65.22	65.22
1	309,233	34.78	100.00
Total	889,053	100.00	

.

.

.

. * Unjust enrichment class

.

. tab2 unjust_enrichment porter_flag-kitchen_flag, firstonly

-> tabulation of unjust_enrichment by porter_flag

unjust_enr ichment	porter_flag		Total
	0	1	
0	353,774	3,648	357,422
1	450,483	81,148	531,631

Total		804,257		84,796		889,053
-------	--	---------	--	--------	--	---------

-> tabulation of unjust_enrichment by janitor_flag

unjust_enr	janitor_flag		
ichment	0	1	Total
-----+-----+-----			
0	346,631	10,791	357,422
1	527,661	3,970	531,631
-----+-----+-----			
Total	874,292	14,761	889,053

-> tabulation of unjust_enrichment by laundry_flag

unjust_enr	laundry_flag		
ichment	0	1	Total
-----+-----+-----			
0	353,714	3,708	357,422
1	516,817	14,814	531,631
-----+-----+-----			
Total	870,531	18,522	889,053

-> tabulation of unjust_enrichment by barber_flag

unjust_enr	barber_flag		
ichment	0	1	Total
-----+-----+-----			
0	357,180	242	357,422
1	525,303	6,328	531,631
-----+-----+-----			
Total	882,483	6,570	889,053

-> tabulation of unjust_enrichment by shower_flag

unjust_enr	shower_flag		
ichment	0	1	Total

	0	352,963	4,459	357,422
	1	480,080	51,551	531,631
Total		833,043	56,010	889,053

-> tabulation of unjust_enrichment by commis_flag

unjust_enr	commis_flag		
ichment	0	1	Total
0	351,512	5,910	357,422
1	521,924	9,707	531,631
Total	873,436	15,617	889,053

-> tabulation of unjust_enrichment by medical_flag

unjust_enr	medical_flag		
ichment	0	1	Total
0	356,089	1,333	357,422
1	529,849	1,782	531,631
Total	885,938	3,115	889,053

-> tabulation of unjust_enrichment by kitchen_flag

unjust_enr	kitchen_flag		
ichment	0	1	Total
0	237,409	120,013	357,422
1	342,411	189,220	531,631
Total	579,820	309,233	889,053

```

.
.
.
. ** Number of shifts associated with each job performed during a given CWP

.
.
.
. * Associate shift count with job performed

.
. foreach x of varlist porter_flag-no_job {
                                2
. gen shift_`x' = shifts*`x'
                                3
. }

.
.
.
. *****

.
. ** CW Anaylsis Shift Counts

.
.
.
. ** FL class (CW analysis)

.
. preserve

.
.
.

```

```

. collapse (sum) shift_*, by(cwp_one-cwp_nine)

.
. reshape long shift_, i(cwp*) j(job) string
(j = barber_flag commis_flag janitor_flag kitchen_flag laundry_flag medical_flag no_job porter_flag shower_flag)

Data                                Wide    ->    Long
-----
Number of observations              9    ->    81
Number of variables                18    ->    11
j variable (9 values)              ->    job
xij variables:
shift_barber_flag shift_commis_flag ... shift_shower_flag->shift_
-----

.
.
.
. gen cwp = 1 if cwp_one == 1
(72 missing values generated)

.
. replace cwp = 2 if cwp_two == 1
(9 real changes made)

.
. replace cwp = 3 if cwp_three == 1
(9 real changes made)

.
. replace cwp = 4 if cwp_four == 1
(9 real changes made)

.
. replace cwp = 5 if cwp_five == 1
(9 real changes made)

```

```

.
. replace cwp = 6 if cwp_six == 1
(9 real changes made)

.
. replace cwp = 7 if cwp_seven == 1
(9 real changes made)

.
. replace cwp = 8 if cwp_eight == 1
(9 real changes made)

.
. replace cwp = 9 if cwp_nine == 1
(9 real changes made)

.
. assert cwp != .

.
.
.
. drop cwp_*

.
.
.
. replace job = substr(job, "_flag", "", .)
(72 real changes made)

.
.
.
. reshape wide shift_, i(job) j(cwp)
(j = 1 2 3 4 5 6 7 8 9)

```



```

Data                Long  ->  Wide
-----
Number of observations      81  ->   9
Number of variables        3  ->  10
j variable (9 values)      cwp  -> (dropped)
xij variables:
                        shift_  ->  shift_1 shift_2 ... shift_9
-----

```

```

.
. rename shift_* shift_cwp*

.
.
.
. * FL CLASS SHIFT COUNTS (CW analysis)

.
. list, ab(33) sep(0)

```

```

+-----+
1. |      job | shift_cwp1 | shift_cwp2 | shift_cwp3 | shift_cwp4 | shift_cwp5 | shift_cwp6 | shift_cwp7 | shift_cwp8 |
   | barber |          0 |          89 |          83 |          548 |          2679 |          1288 |          987 |          840 |
   |-----|
   |                                shift_cwp9 |
   |                                199 |
   +-----+

+-----+
2. |      job | shift_cwp1 | shift_cwp2 | shift_cwp3 | shift_cwp4 | shift_cwp5 | shift_cwp6 | shift_cwp7 | shift_cwp8 |
   | commis |          48 |         2614 |         2432 |          1752 |          4322 |          2936 |          926 |          582 |
   |-----|
   |                                shift_cwp9 |
   |                                140 |
   +-----+

```

```

+-----+
3. |   job | shift_cwp1 | shift_cwp2 | shift_cwp3 | shift_cwp4 | shift_cwp5 | shift_cwp6 | shift_cwp7 | shift_cwp8 |
| janitor |      21 |      4532 |      5912 |      1205 |      1864 |      817 |      784 |      79 |
|-----|
|                                shift_cwp9 |
|                                5 |
+-----+

```

```

+-----+
4. |   job | shift_cwp1 | shift_cwp2 | shift_cwp3 | shift_cwp4 | shift_cwp5 | shift_cwp6 | shift_cwp7 | shift_cwp8 |
| kitchen |     4120 |     54805 |     47487 |     25644 |     67265 |     34905 |     28579 |     35471 |
|-----|
|                                shift_cwp9 |
|                                11276 |
+-----+

```

```

+-----+
5. |   job | shift_cwp1 | shift_cwp2 | shift_cwp3 | shift_cwp4 | shift_cwp5 | shift_cwp6 | shift_cwp7 | shift_cwp8 |
| laundry |      22 |      1318 |      1793 |      1394 |      5051 |      3584 |      2561 |      2285 |
|-----|
|                                shift_cwp9 |
|                                744 |
+-----+

```

```

+-----+
6. |   job | shift_cwp1 | shift_cwp2 | shift_cwp3 | shift_cwp4 | shift_cwp5 | shift_cwp6 | shift_cwp7 | shift_cwp8 |
| medical |       4 |       646 |       508 |       387 |       663 |       62 |       206 |       745 |
|-----|
|                                shift_cwp9 |
|                                47 |
+-----+

```

```

+-----+
7. |   job | shift_cwp1 | shift_cwp2 | shift_cwp3 | shift_cwp4 | shift_cwp5 | shift_cwp6 | shift_cwp7 | shift_cwp8 |
| no_job |    44772 |    111282 |    53361 |    24120 |    51573 |    43824 |    37785 |    35099 |
+-----+

```

shift_cwp9	3236
------------	------

8.	job	shift_cwp1	shift_cwp2	shift_cwp3	shift_cwp4	shift_cwp5	shift_cwp6	shift_cwp7	shift_cwp8
	porter	6	970	1312	8759	38836	15209	10115	10357
					shift_cwp9				
					4733				

9.	job	shift_cwp1	shift_cwp2	shift_cwp3	shift_cwp4	shift_cwp5	shift_cwp6	shift_cwp7	shift_cwp8
	shower	2	939	2346	6862	25511	9682	5014	4736
					shift_cwp9				
					2337				

```

.
.
.
. restore

.
.
.
. * UE class (CW analysis)

.
. preserve

.
.

```

```

.
. keep if unjust_enrichment==1
(357,422 observations deleted)

.
.
.
. assert cwp_four == cwp_four_ue

.
. drop cwp_four_ue

.
.
.
. collapse (sum) shift_*, by(cwp_four-cwp_nine)

.
.
.
. reshape long shift_, i(cwp*) j(job) string
(j = barber_flag commis_flag janitor_flag kitchen_flag laundry_flag medical_flag no_job porter_flag shower_flag)

Data                                Wide   ->   Long
-----
Number of observations              6   ->   54
Number of variables                 15   ->    8
j variable (9 values)                ->   job
xij variables:
shift_barber_flag shift_commis_flag ... shift_shower_flag->shift_
-----

.
.
.
. gen cwp = 4 if cwp_four == 1

```

(45 missing values generated)

```
.  
. replace cwp = 5 if cwp_five == 1  
(9 real changes made)  
  
.   
. replace cwp = 6 if cwp_six == 1  
(9 real changes made)  
  
.   
. replace cwp = 7 if cwp_seven == 1  
(9 real changes made)  
  
.   
. replace cwp = 8 if cwp_eight == 1  
(9 real changes made)  
  
.   
. replace cwp = 9 if cwp_nine == 1  
(9 real changes made)  
  
.   
. assert cwp != .  
  
.   
.   
.   
. drop cwp_*  
  
.   
.   
.   
. replace job = substr(job, "_flag", "", .)  
(48 real changes made)
```

```
.
.
.
. reshape wide shift_, i(job) j(cwp)
(j = 4 5 6 7 8 9)
```

```
Data                Long   ->   Wide
-----
Number of observations      54   ->    9
Number of variables         3   ->    7
j variable (6 values)       cwp   -> (dropped)
xij variables:
                        shift_   ->  shift_4 shift_5 ... shift_9
-----
```

```
.
. rename shift_* shift_cwp*
.
.
.
. * UE CLASS SHIFT COUNTS (CW analysis)
.
. list, ab(33) sep(0)
```

```
+-----+
|      job      shift_cwp4  shift_cwp5  shift_cwp6  shift_cwp7  shift_cwp8  shift_cwp9 |
+-----+
1. | barber          457          2679          1288          987          840          199 |
2. | commis          817          4322          2936          926          582          140 |
3. | janitor         487          1864           817          784           79           5 |
4. | kitchen       11984        67265        34905        28579        35471       11276 |
5. | laundry         775          5051          3584          2561          2285          744 |
6. | medical         171           663           62           206           745           47 |
7. | no_job         7008        51573        43824        37785        35099       3236 |
```

8.		porter	6820	38836	15209	10115	10357	4733	
9.		shower	5572	25511	9682	5014	4736	2337	
+-----+									

```

.
.
.
. restore

.
.
.
. *****

.
. ** EO Anaylsis Shift Counts (for CWP's affected by EO annual changes)

.
. preserve

.
.
.
. * CWP FIVE_14 TO EIGHT_20 (EO analysis)

.
.
.
. collapse (sum) shift_, by(cwp_five_14-cwp_eight_20)

.
. reshape long shift_, i(cwp*) j(job) string
(j = barber_flag commis_flag janitor_flag kitchen_flag laundry_flag medical_flag no_job porter_flag shower_flag)

Data                                Wide    ->    Long
-----

```

```

Number of observations      11  ->  99
Number of variables        19  ->  12
j variable (9 values)      ->  job
xij variables:
shift_barber_flag shift_commis_flag ... shift_shower_flag->shift_
-----

.
.
.
. gen cwp = "cwp_five_14" if cwp_five_14 == 1
(90 missing values generated)

.
. replace cwp = "cwp_five_15" if cwp_five_15 == 1
(9 real changes made)

.
. replace cwp = "cwp_five_16" if cwp_five_16 == 1
(9 real changes made)

.
. replace cwp = "cwp_five_17" if cwp_five_17 == 1
(9 real changes made)

.
. replace cwp = "cwp_six_17" if cwp_six_17 == 1
(9 real changes made)

.
. replace cwp = "cwp_six_18" if cwp_six_18 == 1
(9 real changes made)

.
. replace cwp = "cwp_seven_18" if cwp_seven_18 == 1
variable cwp was str11 now str12

```


(9 real changes made)

```
.  
. replace cwp = "cwp_seven_19" if cwp_seven_19 == 1  
(9 real changes made)
```

```
.  
. replace cwp = "cwp_eight_19" if cwp_eight_19 == 1  
(9 real changes made)
```

```
.  
. replace cwp = "cwp_eight_20" if cwp_eight_20 == 1  
(9 real changes made)
```

```
.  
.   
.   
. * Eliminate shift counts for other CWP & year combos
```

```
.  
. drop if missing(cwp)  
(9 observations deleted)
```

```
.  
.   
.   
. drop cwp_*
```

```
.  
.   
.   
. replace job = substr(job, "_flag", "", .)  
(80 real changes made)
```

```
.  
.
```

```
.
. reshape wide shift_, i(job) j(cwp) string
(j = cwp_eight_19 cwp_eight_20 cwp_five_14 cwp_five_15 cwp_five_16 cwp_five_17 cwp_seven_18 cwp_seven_19 cwp_six_17 cwp_six_18
```

```
Data                Long    ->   Wide
-----
Number of observations      90    ->    9
Number of variables        3     ->   11
j variable (10 values)     cwp    -> (dropped)
xij variables:
                shift_    ->  shift_cwp_eight_19 shift_cwp_eight_20 ... shift_cwp_six_18
-----
```

```
.
.
.
. * CWP FIVE_14 THROUGH EIGHT_20 SHIFT COUNTS (EO analysis)
```

```
. list, ab(33) sep(0)
```

```
+-----+
1. |      job | shift_cwp_eight_19 | shift_cwp_eight_20 | shift_cwp_five_14 | shift_cwp_five_15 | shift_cwp_five_16 |
   | barber |                463 |                377 |                301 |                1140 |                1096 |
   +-----+
   | shift_cwp_five_17 | shift_cwp_seven_18 | shift_cwp_seven_19 | shift_cwp_six_17 | shift_cwp_six_18 |
   |                142 |                360 |                627 |                913 |                375 |
   +-----+

+-----+
2. |      job | shift_cwp_eight_19 | shift_cwp_eight_20 | shift_cwp_five_14 | shift_cwp_five_15 | shift_cwp_five_16 |
   | commis |                217 |                365 |                465 |                1848 |                1662 |
   +-----+
   | shift_cwp_five_17 | shift_cwp_seven_18 | shift_cwp_seven_19 | shift_cwp_six_17 | shift_cwp_six_18 |
   |                347 |                677 |                249 |                1766 |                1170 |
   +-----+
```

```

+-----+
3. | job | shift_cwp_eight_19 | shift_cwp_eight_20 | shift_cwp_five_14 | shift_cwp_five_15 | shift_cwp_five_16 |
| janitor | 0 | 79 | 234 | 1001 | 595 |
|-----|
| shift_cwp_five_17 | shift_cwp_seven_18 | shift_cwp_seven_19 | shift_cwp_six_17 | shift_cwp_six_18 |
| 34 | 357 | 427 | 426 | 391 |
+-----+

```

```

+-----+
4. | job | shift_cwp_eight_19 | shift_cwp_eight_20 | shift_cwp_five_14 | shift_cwp_five_15 | shift_cwp_five_16 |
| kitchen | 14900 | 20571 | 7327 | 27863 | 27521 |
|-----|
| shift_cwp_five_17 | shift_cwp_seven_18 | shift_cwp_seven_19 | shift_cwp_six_17 | shift_cwp_six_18 |
| 4554 | 11788 | 16791 | 21474 | 13431 |
+-----+

```

```

+-----+
5. | job | shift_cwp_eight_19 | shift_cwp_eight_20 | shift_cwp_five_14 | shift_cwp_five_15 | shift_cwp_five_16 |
| laundry | 1125 | 1160 | 489 | 1987 | 2110 |
|-----|
| shift_cwp_five_17 | shift_cwp_seven_18 | shift_cwp_seven_19 | shift_cwp_six_17 | shift_cwp_six_18 |
| 465 | 1089 | 1472 | 2169 | 1415 |
+-----+

```

```

+-----+
6. | job | shift_cwp_eight_19 | shift_cwp_eight_20 | shift_cwp_five_14 | shift_cwp_five_15 | shift_cwp_five_16 |
| medical | 275 | 470 | 105 | 373 | 134 |
|-----|
| shift_cwp_five_17 | shift_cwp_seven_18 | shift_cwp_seven_19 | shift_cwp_six_17 | shift_cwp_six_18 |
| 51 | 13 | 193 | 62 | 0 |
+-----+

```

```

+-----+
7. | job | shift_cwp_eight_19 | shift_cwp_eight_20 | shift_cwp_five_14 | shift_cwp_five_15 | shift_cwp_five_16 |
| no_job | 17929 | 17170 | 3438 | 13707 | 27408 |
+-----+

```

shift_cwp_five_17	shift_cwp_seven_18	shift_cwp_seven_19	shift_cwp_six_17	shift_cwp_six_18
7020	15272	22513	31686	12138

job	shift_cwp_eight_19	shift_cwp_eight_20	shift_cwp_five_14	shift_cwp_five_15	shift_cwp_five_16
porter	3759	6598	5372	19873	11925

shift_cwp_five_17	shift_cwp_seven_18	shift_cwp_seven_19	shift_cwp_six_17	shift_cwp_six_18
1666	3310	6805	8494	6715

job	shift_cwp_eight_19	shift_cwp_eight_20	shift_cwp_five_14	shift_cwp_five_15	shift_cwp_five_16
shower	1959	2777	4003	13414	7030

shift_cwp_five_17	shift_cwp_seven_18	shift_cwp_seven_19	shift_cwp_six_17	shift_cwp_six_18
1064	2484	2530	4398	5284

.
.
.
. restore

.
.
.
. * FINAL CWP IS CONTIGUOUS WITH CWP NINE

.
.
.
. * save out

```
.  
. save "`output'\counts_data.dta", replace  
file `output'\counts_data.dta saved
```

```
.  
.   
.   
. log close  
    name: <unnamed>  
    log: `output'\logs\data_counts.log  
    log type: text  
closed on: 20 Dec 2021, 08:53:29  
-----
```